Subject Matter Code: E-01g Sample Facilities

Comment ID: CTR-021-008
Comment Author: LeBoeuf, Lamb, Green & MacRae
Document Type: Local Government
State of Origin: CA
Represented Org: City of Sunnyvale
Document Date: 09/25/97
Subject Matter Code: E-01g Sample Facilities
References: Letter CTR-021 incorporates by reference letter CTR-035
Attachments? Y
CROSS REFERENCES

Comment: EOA submits the following comments on the Draft California Toxics Rule on behalf of the City of Sunnyvale. Sunnyvale owns and operates a 29.5 mgd advanced secondary municipal wastewater treatment plant that discharges into the extreme South San Francisco Bay. Sunnyvale has had in place for several years comprehensive source control, pollution prevention, and waste minimization programs.

The San Francisco Bay Regional Water Quality Control Board (RWQCB) considers Sunnyvale a shallow water discharger and does not allow dilution credit in calculating effluent limits. As such Sunnyvale faces considerable difficulties in complying with end-of-the-pipe limits for copper and potentially several toxic organics that have proposed criteria lower than the analytical detection limit.

One of the key items contained in the CTR that directly impacts Sunnyvale is the effluent limit attainability analysis and cost of compliance for Sunnyvale contained in the Analysis of Economic Costs Technical Support Document and Appendix. The methodology is flawed, a number of assumptions (including basic facts) are incorrect and thus lead to erroneous results. Reliance on an incorrect analysis of the City of Sunnyvale WPCP and then extrapolation of this analysis to other California dischargers will lead to other erroneous and misleading results and conclusions.

The EPA Sunnyvale Case Study Did Not Follow EPA's TSD and Did Not Use Current Available Effluent Data and thus Contains Erroneous Conclusions

Attachment no. 1 to this memo contains a detailed analysis of deficiencies in EPA's analysis of the Sunnyvale Case Study, specifically an evaluation of Sunnyvale's compliance with calculated CTR based effluent limits (Analysis of Potential Costs TSD Appendices I-B, 11-B, II I-B). It is not clear why EPA did not employ a more straight-forward 1991 TSD based approach (Chapters 3 and 5) starting with a reasonable potential analysis based on actual data followed by effluent limit calculation. Some of the fundamental assumptions behind the approach used are flawed, leading to erroneous conclusions, some overly conservative, some not.

For example from Table I-B-4, silver was reported to be a problem since the calculated CTR limit (1.76 ug/L) was less than the current limit (2.3 ug/L) , even though the maximum historic effluent value (1.6 ug/L) was less than either limit. The CTR analysis also appears to be confusion over effluent limit averaging periods since the CTR limit of 1.76 ug/L is derived from a one day maximum toxicity based criterion yet the limit is described as a monthly average limit. Current NPDES permits in the San Francisco Bay Region do not have monthly average limits for silver. The CTR should explain how the proposed 3.8 ug/L daily maximum limit is considered protective of aquatic life.

Response to: CTR-021-008

To estimate costs related to implementation of the CTR, EPA selected a sample of point source dischargers for evaluation to represent the universe of point source dischargers to inland waters, enclosed bays, and estuaries. As described in SAIC and Jones and Stokes Associates (1997), this sample was selected based on a number of factors, including type of facility, geographic location, etc. Available dilution was not considered in selecting a sample.

However, dilution factors used to calculate water quality-based effluent limits (WQBELs) were based on the dilution allowed within the current waste discharge requirements for each sample facility. Of the 20 sample facilities, only four were provided with dilution factors; WQBELs for the remaining facilities were based on a dilution of zero. When this sample is extrapolated to the universe, over 94% of point source dischargers are estimated to not be allowed dilution. EPA believes that this is a highly conservative estimate that will likely overestimate potential costs.

Reference: SAIC and Jones and Stokes Associates, Inc. 1997. Analysis of Potential Costs Related to the Implementation of the California Toxics Rule. Prepared for U.S. EPA, Office of Science and Technology and U.S. EPA Region IX, May 5.

Comment ID: CTR-021-014
Comment Author: LeBoeuf, Lamb, Green & MacRae
Document Type: Local Government
State of Origin: CA
Represented Org: City of Sunnyvale
Document Date: 09/25/97
Subject Matter Code: E-01g Sample Facilities
References: Letter CTR-021 incorporates by reference letter CTR-035
Attachments? Y
CROSS REFERENCES

Comment: Attachment 1 - Comments on "Sunnyvale Facility Summary" Appendices

ANALYSES-

As discussed in the above memo, a fundamental methodological assumption was incorrect causing bias in the ensuing technical and economic analyses. Therefore, detailed comment on the results are for the most part inappropriate. In addition, the entire analyses conducted for the City of Sunnyvale apparently utilized a dataset containing effluent data from 1991 through 1993 when more appropriate recent data (1994-1996) should have been used. However, as an illustration of how the results are biased, the following points are presented:

Appendix I-B:

Appendix I-B states that "The existing permit limits and/or the maximum reported concentrations of silver, endrin, pentachlorophenol, 1,2-dichlorobenzene, chlorodibromomethane, and toluene are less stringent than the projected CTR-based limits (see Table I-B-4)". The following discussion addresses each of those constituents:

* Silver: The CTR based average monthly limit is 1.76 mg/L and the maximum daily limit is 3.8 mg/L. The current daily maximum limit is 2.3 mg/L. Based on a reasonable potential analysis (Attachment - 2) of plant performance data from 1994 through 1996, the projected maximum concentration is lower than the CTR based average monthly limit.

* 1,2-dichlorobenzene, and toluene: The CTR based average monthly limit for each of these constituents decreased below the current effluent limit, therefore they were cited as requiring additional removal for compliance. However the City's reasonable potential analysis of plant performance data from 1993 through 1996 indicates that there is no reasonable potential to exceed the CTR based limit (i.e. values were orders of magnitude below the proposed limits).

* Endrin and Pentachlorophenol: The CTR based average monthly limit for pentachlorophenol decreased from 8.2 mg/L to 7.4 mg/L, triggering its inclusion in the CTR evaluation. During the time period of 1993 through 1996, 16 samples were analyzed at a detection limit of 10 mg/L, all of which were reported below detectable levels. Endrin was never detected in the effluent, but the available detection limits were above the CTR based effluent limit.

* Chlorodibromomethane: Currently, THMs are regulated for the City of Sunnyvale at a level of 480 mg/L as an average monthly limit for Total THMs. A reasonable potential analysis of plant performance data from 1993 through 1996 indicates that there is a reasonable potential to exceed the CTR based limit of 34 mg/L.

* Copper should have been flagged as a pollutant with reasonable potential to exceed the limit. A reasonable potential analysis of plant performance data will show that there is areasonable potential for copper to exceed the maximum daily CTR based limit of 9.27 mg/L and the average monthly limit of 5.55 mg/L. The analysis summarized in Table I-B-3, only compares the proposed site specific objective of a maximum daily limit of 4.9 mg/L to the CTR based average monthly limit of 5.55 mg/L.

* Dichlorobromomethane: This is similar to chlorodibromomethane in that a reasonable potential analysis will demonstrate that there is a reasonable potential for this constituent to exceed the CTR based average monthly limit.

Appendix II-B:

Appendix II-B states that "The existing permit limits and/or the maximum reported concentrations of silver, endrin, pentachlorophenol, and 1,2-dichlorobenzene, are less stringent than the projected CTR based limits (see Table II-B-4)". Refer to the discussion above for an interpretation of effluent concentrations for each of these pollutants.

Response to: CTR-021-014

Sunnyvale stated that the technical and economical analysis is biased because of an incorrect fundamental assumption and because the effluent data used for Sunnyvale (1991-1993) were not recent. Since Sunnyvale has disagreed with many of the methodological assumptions used for the analysis, it is difficult to determine to which specific assumption Sunnyvale is referring. Sunnyvale also raised questions regarding issues such as assigning reasonable potential in the high scenario based on existence of permit limits and the use of the projected average monthly limit to assess compliance. EPA's responses to these questions follow.

* EPA's revised Economic Analysis included the use of effluent data that were reported between January 1995 and December 1997. These were the most recent data available at the time the analysis

was completed.

* Analysis of silver effluent data indicate that this pollutant does not have reasonable potential to exceed a CTR-based limit. Thus, no compliance costs are necessary in the low scenario. However, pollution control costs are necessary in the high scenario because the existing permit limit is less stringent than the projected CTR-based limit. As indicated in the Economic Analysis, EPA determines reasonable potential to exceed CTR-based limits in the high scenario if a pollutant has an existing permit limit or if the projected effluent quality based on the facility effluent data is greater than CTR-based limits. EPA recognizes that this is a conservative assumption that may overstate costs in the high scenario if a pollutant is limited in a permit but is not actually present in the effluent.

* 1,2-dichlorobenzene and toluene do not have reasonable potential to exceed water quality criteria andthus no associated compliance costs in the low scenario of the revised Economic Analysis. However, reasonable potential and compliance costs are assigned in the high scenario because existing permit limits for these pollutants are less stringent than the projected CTR-based limits. The rationale behind this assumption is the same as for silver (see above).

* Endrin is not listed as a pollutant of concern in the revised Economic Analysis. In the low scenario, reasonable potential is not assigned because, as Sunnyvale also indicated, the pollutant is consistently reported below detection levels. In the high scenario, no costs are assigned because the existing limit is as stringent as the projected CTR-based limit. Sunnyvale indicated that although endrin was detected in the effluent, the detection level is greater than the projected CTR-based effluent limit suggesting that controls may be necessary. However, since the existing permit limit is as stringent as the CTR-based projected limit, any compliance costs are attributable to the existing limit and not the CTR.

* In the revised Economic Analysis, pentachlorophenol is assigned compliance costs in the high scenario and not in the low scenario. This is because the existing permit limit is less stringent than the projected CTR-based limit and all available effluent data are below detection levels. As shown in the cost decision matrix presented in the Economic Analysis, EPA assumes that addition of treatment is not justified when effluent data are inconclusive or limited.

* No pollution control costs are estimated for chlorodibromomethane and dichlorobromomethane in the revised Economic Analysis. The existing NPDES permit does not include limits for these constituents. In addition, no recent effluent monitoring data (1995 to 1997) were available. Although, Sunnyvale indicated that it had completed reasonable potential analyses for chlorodibromomethane and dichlorobromomethane, it did not provide these analyses to EPA.

* Please see the response to CTR-021-004 for a detailed discussion of EPA's response to the issues the commenter raises regarding copper.

* In the revised Economic Analysis, the reduced risk level scenario for silver, endrin, pentachlorophenol, and 1,2-dichlorobenzene (Appendix II-B) is identical to the base scenario. Thus, the above responses are also applicable to the Appendix II-B comments Sunnyvale submitted.

Comment ID: CTR-035-059
Comment Author: Tri-TAC/CASA
Document Type: Trade Org./Assoc.
State of Origin: CA

Represented Org:
Document Date: 09/25/97
Subject Matter Code: E-01g Sample Facilities
References:
Attachments? N
CROSS REFERENCES

Comment: Weaknesses in Cost Analysis

The report's cost estimates exhibit a number of significant weaknesses, as follows:

* No evidence is presented that the selected case studies reflect the overall population of affected parties. Although a stratified sample approach appears to reflect sound basis from which to estimate costs, USEPA provides no explanation as to how the case study areas were selected- no evidence that the impacted population is statistically "normal"(*6) and no informationindicating that the sample size is sufficient to make generalizations (e.g., 7 percent of the major POTW NPDES permittees; 1 percent of the minor NPDES permmittees). Likewise the analysis points to significant diversity in how Regional Water Quality Boards treat permits, with potentially concomitant cost implications. Excluding a few high-cost parties from the sample, and ignoring regional Board behavior, could falsely indicate that total Rule costs are less than $100 million a year.

An alternative sampling approach could focus on the presence and distribution of affected pollutants, rather than the impacted entities. Since costs to control metals and mercury are estimated to account for almost 60 percent of total annual costs,(*7) examination of the presence of these pollutants in different state regions could provide a basis for alternative cost estimates.(*8) Or, to account for different regional water quality conditions and Regional Board behavior, sampling could be done by water body.

(*6) In fact, the provided data implies that a handful of dischargers may be responsible for the great majority of costs.

(*7) This estimate in itself may be suspect, as organics may account for a larger proportion of the contaminants than indicated by USEPA.

(*8) This approach would require a great deal more information about existing pollutant characteristics and distribution. However, such knowledge would seem to be a critical precursor to rule development.

Response to: CTR-035-059

See responses to CTR-021-005c and CTR-059-018.

Comment ID: CTR-041-010d
Comment Author: Sacramento Reg Cnty Sanit Dist
Document Type: Sewer Authority
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: E-01g Sample Facilities

References:
Attachments? N
CROSS REFERENCES E-01n
E-01m
E-01e

Comment: 5. Concerns Regarding Economic Analysis

The District also has several significant concerns with the Economic Analysis that was performed for the proposed rule. Concerns about the cost estimates made for both the District and the state are presented here. (See attached Review of EPA's Economic Analysis of the Proposed California Water Quality Toxics Rule.) Overall, the District believes that problems with the Economic Analysis are serious enough that is should be redone. As stated above in our analysis of assumed costs at the SRWTP, the use of questionable data without qualification combined with unsubstantiated assumptions regarding costs to achieve compliance resulted in a gross underestimate in the cost-effectiveness ratio. The District's first concern is that if the types of problems found in our Case Study are widespread in other studies, the complete analysis is suspect.

In addition to the analysis of the District's facilities, there are several other points which have been used by EPA to lead to a potentially serious understatement of actual costs. The key assumptions involved are that: 1) no costs would occur if either no monitoring data presently exists or if that data is below analytical detection levels; 2) no treatment costs would occur whenever EPA's initial estimates showed high costs, due to successful regulatory relief; 3) no costs are included for nonpoint sources such as municipal stormwater management systems; and 4) no costs are included for indirect dischargers to the District's system that are not large enough to be considered a Significant Industrial User (SIU).

Regarding the first assumption, the District has found that there is pressure from many sides, including the Safe Drinking Water Act, to both increase the number of constituents being monitored and to lower detection levels to meet numeric criteria set by EPA and the state. To assume that monitoring of these new constituents will not lead to any treatment cost increases is simply unrealistic. Similarly, the second assumption about absolute success in every pursuit of regulatory relief is also overly optimistic. There are no guarantees that pursuit of regulatory relief will be successful in any situation, and EPA indicates elsewhere in the preamble that options such as variances and site-specific criteria will rarely, if ever, be granted.

The third and fourth key assumptions ignore present dominating trends and facts, i.e. that. prevention and control of pollutants at their sources, including very small indirect dischargers, storm runoff, and other nonpoint sources are now the major focus of EPA's wastewater programs nationally. While we agree that these management steps should be taken, there will be significant costs attached to the implementation of these steps that cannot be ignored.

Combined with concerns the District has heard from other sources such as the California Association of Sanitation Agencies (CASA), it appears that EPA has failed to make "a reasoned determination that the benefits of the intended regulation justify its costs." Therefore the District believes that the Agency is obligated to redo the draft Economic Analysis.

Response to: CTR-041-010d

See responses to CTR-032-004, CTR-021-006b, CTR-040-037, and CTR-003-011.

Comment ID: CTR-043-004a
Comment Author: City of Vacaville
Document Type: Local Government
State of Origin: CA
Represented Org:
Document Date: 09/26/97
Subject Matter Code: E-01g Sample Facilities
References:
Attachments? Y
CROSS REFERENCES E-01h
E-01m
E-02c
E-01c02

Comment: 4. EPA's Economic Analysis is seriously flawed. The major flaws include:

(1) failing to do an appropriate sampling of small dischargers having little or no dilution;

(2) assuming in the high-end cost scenario that a 25% reduction could be achieved through source control and an additional 25% achieved through treatment plant optimization without capital improvements;

(3) constraining estimates of potential costs through key assumptions, including the assumption that regulatory relief from the rule would be granted if costs were in excess of certain thresholds; and

(4) exaggerating estimates of potential benefits by assuming an end (i.e., achievement of the proposed water quality criteria) that will not result from the rule.

The result of these flaws is that potential costs are greatly understated and potential benefits are greatly overstated. Moreover, the flawed economic analysis has lead to the erroneous conclusion that the CTR is not a "significant regulatory action" or major rule subject to Presidential Executive Order 12866 and the Unfunded Mandates Reform Act or a rule that affects small entities protected under the Regulatory Flexibility Act.

Response to: CTR-043-004a

See responses to CTR-054-013a, CTR-021-005c, CTR-032-004, CTR-021-008, CTR-040-029a, CTR-056-018, and CTR-059-018.

Comment ID: CTR-092-014
Comment Author: City of San Jose, California
Document Type: Local Government
State of Origin: CA
Represented Org:
Document Date: 09/26/97
Subject Matter Code: E-01g Sample Facilities
References: Letter CTR-092 incorporates by reference letter CTR-035
Attachments? Y

CROSS REFERENCES

Comment: EPA's Economic Analysis

Attachment 4 to this letter, are detailed comments by the City on EPA's Economic Analysis of the costs and benefits that are anticipated from adoption of the CTR. This attachment is also incorporated as part of our comments and is being submitted for inclusion in the record for this rulemaking.

Although the City initially supported a waiver of OMB review of the CTR, we are very concerned with the number of uncertainties and erroneous assumptions contained in the Economic Analysis. We are particularly concerned with EPA's interpretation of the San Jose/Santa Clara facility data as it relates to the cost and attainability of limits based on the proposed copper and nickel criteria. We are also extremely concerned with the use of this data to draw conclusions about costs and compliance with for other pollutants or other facilities. Finally, we are also concerned that the State may attempt to use or rely on the Economic Analysis in promulgating its implementation plan.

We understand the difficulty of performing such an analysis, but we also believe that the importance of a complete, thorough and supportable Economic Analysis cannot be overstated. As discussed in more detail in Attachment 4, the Economic Analysis does not fully account for all costs and the benefits, nor does the Analysis accurately calculate and analyze the costs and benefits that are presented. As indicated above, EPA's conclusions about costs and benefits cannot be validated at this time due to uncertainties about State implementation of the Rule.

Response to: CTR-092-014

See responses to CTR-021-011 and CTR-040-037.

Subject Matter Code: E-01g01 Low or Zero Dilution

Comment ID: CTR-108-001
Comment Author: City of Los Angeles
Document Type: Local Government
State of Origin: CA
Represented Org:
Document Date: 10/31/97
Subject Matter Code: E-01g01 Low or Zero Dilution
References:
Attachments? Y
CROSS REFERENCES

Comment: On behalf of Dr. Ing Yih Cheng, I am sending you copies of tables which described the constituents of concern with respect to CTR at Los Angeles-Glendale Water Reclamation Plant, Terminal Island Wastewater Treatment Plant, and Donald C. Tillman Water Reclamation Plant. Detailed information regarding the concern constituents at each plant will be forwarded to you sometimes next week.

If you have any questions regarding these tables please call me at (310)524-1171.

Response to: CTR-108-001

See response to CTR-092-017.

Subject Matter Code: E-01g02 Another EA for Sample Fac

Comment ID: CTR-052-014
Comment Author: East Bay Dischargers Authority
Document Type: Sewer Authority
State of Origin: CA
Represented Org:
Document Date: 09/26/97
Subject Matter Code: E-01g02 Another EA for Sample Fac
References: Letter CTR-052 incorporates by reference letters CTR-035 and CTR-054
Attachments? Y
CROSS REFERENCES

Comment: C. RECOMMENDATIONS FOR MODIFICATIONS TO THE CTR AND EA

Revise the Economics Analysis. The EA should be revised to incorporate the updated and more representative cost data provided by POTWs. The benefits analysis should also be revised using the methodology recommended by M.Cubed and others. EPA should use data more representative of California, rather than relying on questionable data from a Ph.D. dissertation. The EA should also include sub-sections specific for San Francisco Bay and effluent dependent water bodies.

Response to: CTR-052-014

See response to CTR-021-008.

To update its analysis for the final CTR, and in response to comments, EPA collected the most recent publicly available data for all facilities included in the cost analysis, including permits, fact sheets, permit applications, and discharge monitoring data. Data submitted as a part of the public comments were also reviewed and considered.

Comment ID: CTR-057-001
Comment Author: City of Los Angeles
Document Type: Local Government
State of Origin: CA
Represented Org:
Document Date: 09/26/97
Subject Matter Code: E-01g02 Another EA for Sample Fac
References:
Attachments? N
CROSS REFERENCES

Comment: Thank you for the opportunity to submit comments on the proposed California Toxics Rule (CTR). As we indicated in our oral comments at the September 18, 1997 public meeting, the City of Los Angeles is primarily concerned about the adequacy of your agency's cost/benefit analysis (particularly with respect to the Tillman Water Reclamation Plant case study). Although we highlight this issue in the following comments, we have a number of additional concerns regarding other important matters raised by the proposed Rule that are also presented. We strongly urge the EPA to consider these comments and

recommendations, especially with regard to revision of the economic analysis.

Overview of Affected Facilities

The City owns and operates three treatment facilities that would be impacted by the proposed Rule:

DC Tillman Water-Reclamation Plant. This 80-MGD facility is located in Van Nuys and provides tertiary-treated reclaimed water that is essential for current and planned reuse projects (irrigation, recreation and wildlife habitat) and aquatic wildlife support (via discharges to natural portions of the Los Angeles River). A major water reclamation project (East Valley Water Recycling Project), currently under construction, will deliver up to 30 MGD of flow to groundwater recharge basins and industrial users in the San Fernando Valley. The plant's service area comprises a population of approximately 1 million people.

Los Angeles-Glendale Water Reclamation Plant. This 20-MGD capacity plant (partly owned by the City of Glendale) supplies tertiary-treated reclaimed water for several industrial and irrigation uses, while discharges to the Los Angeles River support natural portions of the Los Angeles River. The plant's service area includes portions of the cities of Los Angeles and Glendale, comprising a total served population of approximately 250,000 people.

Terminal Island Treatment Plant. This 30-MGD facility, located in San Pedro was recently upgraded to tertiary capability via the addition of deep-bed effluent filters. This plant is the site of a major water reclamation project which will ultimately supply advanced-treated (microfiltration/reverse osmosis) effluent to nearby oil refineries and support industries. The plant serves a population of about 300,000 people.

The combined annual operation and maintenance cost of these facilities is approximately $15 million. As the City is also expanding its Hyperion Treatment Plant to full-secondary capability, the incurred costs of this and other capital-improvement efforts have severely restricted the City's ability to invest in additional projects without placing additional financial burdens on rate payers in the City. Consequently, the benefits (as well as the costs) of the CTR as identified in the EPA's economic analysis were examined closely.

Comments

While the CTR proposes criteria and provisions having a broad range of impacts to POTWS, we have identified a number of issues that we are primarily concerned with. These are discussed individually in the following statements.

Economic Analysis

In view of the substantial capital and O&M investment that the City's treatment facilities represent, our primary concern of course is the proposed Rule's Economic Analysis (EA) and the misleading impression it makes with respect to the Rule's probable cost. Overall, we believe that the CTR presents the EA as a conclusive statement of cost based on two model approaches, of which neither represents an accurate assessment of the true costs to POTWs. The first model provides what is essentially a "no cost" scenario, while the second approach results in a high-end amortized cost of only $86.6 million per year State-wide. This number (rounded to $100 million) and the methods utilized in its derivation is highly suspect as a basis for the Office of Management and Budget's declaration that the Rule will not significantly impact State dischargers. The figure was based for the most part on the EPA's investigations of several case

studies in which detailed cost analyses were conducted for POTWs deemed to be "problematic;" that is, treatment facilities whose performance histories indicated the possibility that the proposed Rule would have significant cost impacts.

These case studies included our Tillman facility, which since 1991 has undergone a uniquely painful experience with respect to NPDES compliance as a direct result of priority-pollutant rule promulgation. As you are likely aware, the plant's NPDES permit was renewed in September 1991 shortly after the State's adoption of the Inland Surface Waters Plan (ISWP), which itself imposed priority-pollutant criteria identical with or similar to those included in the proposed Rule. To our knowledge, our plant was the only one in the region that suffered the fate of having to comply with a water quality control plan that was subsequently invalidated by the State Superior Court.

Following the ISWP's April 1991 adoption and renewal of the NPDES permit, our plant immediately experienced compliance difficulties with respect to chronic toxicity, copper, lindane, DDT, methylene chloride, and numerous other trace organic compounds. In April 1992, we completed a 6-month study investigating the probable cost of ISWP compliance for the Tillman facility. In view of the staggeringly high costs we identified (see following summary), we initiated ongoing and costly efforts to identify and implement industrial source controls; from this, we reduced methylene chloride down to compliance levels but we determined that many of the problem constituents are not source-controllable. Consequently, in 1993 we initiated a process with the Los Angeles Regional Water Quality Control Board to obtain relief in the form of a modification of the NPDES permit. Since that time, and even in view of the 1995 invalidation of the ISWP, we have been unsuccessful in negotiating what we feel are justified revisions to the NPDES permit.

EPA's cost estimates in the Tillman EA take none of this into account. The EPA instead treats the plant's NPDES as a compliance baseline from which comparisons with the CTR are made. As a result, it was a foregone conclusion that the EPA would not find any significant cost impacts to the plant due to the proposed Rule, as the Rule's criteria are already effectively contained in the plant's NPDES permit! Our 1992 cost estimates (see attached summary sheets) translate into an annual amortization and O&M cost of approximately $36 million. An updated estimate ($40 million) conducted on the basis of the proposed Rule confirms the magnitude of these costs.

When we described this situation at the September 18 public meeting, we were advised by the national EPA representative to seek variances for problem constituents. While these variances can alleviate Tillman's non-compliance issue, this approach does not address the compliance cost underestimation issue. In view of this, we believe that the EA is fundamentally flawed from the Tillman plant's perspective and therefore in need of substantial revision. Furthermore, this is not a moot point given the fact that the State intends to adopt a revised version of the ISWP, as it is our belief that EPA recognition of the probable true costs of CTR compliance would have a major effect on ISWP implementation provisions. We believe that a more objective assessment of the CTR's cost impact would also provide a more realistic evaluation of the Rule's environmental benefits, which by comparison appear to be overestimated in the EA.

The City therefore respectfully requests the EPA to revise the economic assessment and to amend the Tillman EA to reflect the true cost of compliance. Given the somewhat unfortunate timing of the proposed Rule with the State's own Draft Implementation Policy (which we have only begun to analyze), we further request that the EPA consider working in collaboration with the State and the public members of the State's Economic Considerations Task Force to develop mutually agreed-upon approaches needed to revise the EA.

Miscellaneous comments:

* The EA refers to a 10-year amortization schedule (Pages 4-2 and 9-3), but Exhibit 9-2 (the cost benefit comparison) refers to equipment purchases at 1 and 16 years (a 15-year amortization schedule).

* The statements in the last row of Exhibit 8-21 casts considerable doubt on the overall adequacy of the EA with respect to benefits.

* The EA avoids the issue of cross-media pollutant transfer and the associated costs. Spent activated carbon and reverse-osmosis brine are wastes representing real disposal problems.

Response to: CTR-057-001

See responses to CTR-021-005c, CTR-040-026, CTR-021-004, and CTR-054-033.

EPA corrected this discrepancy in its revised analysis.

Subject Matter Code: E-01g03 Cost Effectiveness Ratio

Comment ID: CTR-040-039
Comment Author: County of Sacramento Water Div
Document Type: Storm Water Auth.
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: E-01g03 Cost Effectiveness Ratio
References: Letter CTR-040 incorporates by reference letter CTR-027
Attachments? Y
CROSS REFERENCES

Comment: EPA's estimate of cost-effectiveness ($8 - $12 per toxic pound equivalent) is considerably lower than the estimates prepared by others. The Bay Area Dischargers Association and the Novato Sanitary District calculated unit costs for copper removal to be in excess of several thousand dollars per toxic pound equivalent removed.

Response to: CTR-040-039

In response to comments received by EPA on the economic analysis that accompanied the proposed CTR, EPA collected additional data for the sample facilities. EPA also revised its estimate of potential compliance costs attributable to the CTR.

EPA's low estimate of total annualized costs of the final CTR is $33.5 million per year and its high estimate is $61.0 million per year. The low and high estimates vary based on whether effluent data or permit limits are used to assess the need for additional controls. They also vary based on whether or not alternative regulatory approaches, such as phased total maximum daily loads/water quality assessments, site-specific criteria modifications, standards variances, metals translators, etc., are considered under certain circumstances. EPA believes that its estimates of costs and benefits are sound.

EPA believes that several general observations can be made regarding studies submitted by commenters and how they differ from the EPA cost study for the final CTR. Many commenters assumed that the mere presence of a pollutant would result in costs to comply with a CTR-based WQBEL. It should be noted that the presence of a pollutant in an ambient inland water, enclosed bay, or estuary does not require permitting authorities to establish a WQBEL for that pollutant. The establishment of a permit limit is appropriate only where the permitting authority determines that a pollutant is likely to be present, and that the pollutant concentration has a "reasonable potential" to cause or contribute to an exceedance of the applicable water quality standard. Where the pollutant is not likely to be present, or is not present at levels that have reasonable potential to cause or contribute to a water quality standard exceedance, a WQBEL may not be necessary.

The majority of cost estimates provided by commenters include the costs for the addition of end-of-pipe treatment to achieve proposed CTR-based WQBELs. This was particularly the case when WQBELs were expected to be below analytical detection levels. EPA disagrees that end-of-pipe treatment is necessary to achieve CTR-based WQBELs in all cases. As discussed in SAIC (1995), there are documented cases where waste minimization or source control techniques have been used to comply with existing permit limits established below detection levels. Other examples include the Western Lake Superior Sanitary District (WLSSD), who after evaluating the costs involved to meet more stringent WQBELs for mercury

with end-of-pipe treatment, concluded that pollution prevention techniques were the preferable control strategy. As a result, WLSSD published a guide designed to "assist wastewater treatment plant staff with creating and implementing their own mercury reduction projects." As a result of the efforts of WLSSD, effluent mercury levels were found to decrease from 0.58 parts per billion (ppb) to 0.015 ppb.

Although waste minimization or source controls are not always applicable, EPA assumes in its low estimate of costs that a facility would first evaluate whether process changes or modifications are feasible, prior to incurring costs for adding treatment.

In addition, many commenters assumed that compliance would be based on the WQBEL, regardless of whether it is below the analytical method detection level (MDL). This is not consistent with current practice. Instead, the State may use the "minimum level" (ML) (as defined in 40 CFR Part 136) as the required compliance point where a permit limit is established at a value below the MDL. The ML is a value at which the limited parameter can be accurately quantified, and is always greater than or equal to the MDL. To ensure that its cost estimates were conservative (i.e., erring on the side of higher costs), EPA used the MDL as the compliance level. Although EPA used the pollutant MDL for costing purposes, the Agency acknowledges that estimating treatment costs for WQBELs below the MDL is speculative and likely unrealistic.

Finally, many of the commenters included costs related to installation of treatment for storm water discharges. As further described in the responses to CTR-021-008 and CTR-040-004, EPA believes that the final CTR will not significant affect the current storm water program being implemented by the State, which includes the requirement to develop best management practices to control pollutants in storm water discharges. As such, EPA believes that inclusion of end-of-pipe treatment costs for storm water are inappropriate.

Reference: SAIC. 1995. Assessment of Compliance Costs Resulting from Implementation of the Final Great Lakes Water Quality Guidance. Prepared for U.S. EPA, Office of Science and Technology, March 13.

Comment ID: CTR-041-035
Comment Author: Sacramento Reg Cnty Sanit Dist
Document Type: Sewer Authority
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: E-01g03 Cost Effectiveness Ratio
References:
Attachments? N
CROSS REFERENCES

Comment: EPA's estimate of cost-effectiveness ($8 - $12 per toxic pound equivalent) is considerably lower than the estimates prepared by others. The Bay Area Dischargers Association and the Novato Sanitary District calculated unit costs for copper removal to be in excess of several thousand dollars per toxic pound equivalent removed.

Response to: CTR-041-035

See response to CTR-040-039.

Comment ID: CTR-044-030
Comment Author: City of Woodland
Document Type: Local Government
State of Origin: CA
Represented Org:
Document Date: 09/26/97
Subject Matter Code: E-01g03 Cost Effectiveness Ratio
References:
Attachments? N
CROSS REFERENCES

Comment: EPA's estimate of cost-effectiveness ($8 - $12 per toxic pound equivalent) is considerably lower than the estimates prepared by others. The Bay Area Dischargers Association and the Novato Sanitary District calculated unit costs for copper removal to be in excess of several thousand dollars per toxic pound equivalent removed.

Response to: CTR-044-030

See response to CTR-040-039.

Comment ID: CTR-054-013a
Comment Author: Bay Area Dischargers Assoc.
Document Type: Sewer Authority
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: E-01g03 Cost Effectiveness Ratio
References:
Attachments? Y
CROSS REFERENCES E-01q01
E-01m
E-02l

Comment: The economic analysis is seriously flawed. The major flaws include: (1) failing to do an appropriate sampling of dischargers; (2) assuming in the high-end cost scenario that a 25% reduction could be achieved through source control and an additional 25% achieved through treatment plant optimization without capital improvements; (3) constraining estimates of potential costs through key assumptions, including the assumption that regulatory relief from the rule would be granted if costs were in excess of certain thresholds; and (4) exaggerating estimates of potential benefits by assuming an end (i.e., achievement of the proposed water quality criteria) that will not result from the rule (see Attachment 3). The result of these flaws is that potential costs are greatly understated and potential benefits are greatly overstated. BADA's analysis shows that its member agencies alone could be faced with costs in excess of $100 million per year to achieve effluent limits based on the copper, PAH, heptachlor and aldrin criteria. BADA's analysis also indicates that the benefits associated with this

expenditure will be difficult to measure. Copper loadings will be reduced by 1% and the level of compliance for PAH's and heptachlor will remain unchanged at its present high level. Certainly these benefits will not measurably improve the fishing experience or measure the number of fisherman in the Bay, significantly reduce the cancer cases, or improve property values or other nonuse benefits, as estimated in EPA's economic analysis. A further consequence of the flawed economic analysis is the conclusion that the CTR is not a major rule (i.e., one which will result in excess of $100 million per year expenditure) subject to Presidential Executive order 12866 and the Unfunded Mandates Reform Act or a rule that affects small entities protected under the Regulatory Reform Act. BADA agencies provide service to a number of small communities with populations under 50,000 people that could be greatly impacted by the proposed rule.

Response to: CTR-054-013a

EPA believes that the sample of dischargers selected adequately represents the various types of direct dischargers in the state. EPA would have considered any and all information submitted by a discharger that did not think it was adequately represented by the sample facilities.

See responses to CTr-021-008, CTR-059-018, CTR-040-029a, CTR-032-004, CTR-056-018, and CTR-021-005c.

The commenter is referring to the estimate of total potential benefits in the analysis of benefits document. In EPA's EA for the proposed (and final) rule, only the portion of benefits expected to be achieved by implementing controls on point source dischargers are counted. EPA recognizes that the proposed standards will not be achieved in some cases by controlling point sources alone. EPA's assumptions regarding the attribution of benefits to the rule are described in the EA for the proposed rule in Chapter 7.

EPA's analysis presents only the portion of the total potential benefits that can be achieved by controlling point sources. EPA expects additional benefits will accrue as a result of controlling other sources. EPA has no reason to believe that the standards established by the CTR cannot be achieved.

EPA believes that controls on point source dischargers will, in many cases, contribute to attaining standards in a given water body. As controls on other sources are also implemented, the water quality standards can be achieved. However, the total maximum daily load (TMDL) process is provided to address cost-ineffectiveness as it pertains to point or nonpoint sources. For example, if controls on nonpoint sources are a more cost-effective approach to achieving standards, the State can redistribute the load allocations through the TMDL process.

EPA did not include values for water- and land-related benefits other than fishing, but noted that potential benefits may be underestimated because these benefit categories are not included. As described in the EA (See Chapter 8), EPA believes that these benefits may be appreciable because such recreational activities (e.g., boating, swimming, picnicking, and related activities) have been shown in empirical research to be highly valued, and even modest changes in participation or user values could lead to sizable benefits statewide. Some of these activities can be closely associated with water quality attributes (e.g., swimming) and others might increase due to their association with fishing, swimming, or other activities in which the participants might engage.

Comment ID: CTR-054-034
Comment Author: Bay Area Dischargers Associati

Document Type: Sewer Authority
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: E-01g03 Cost Effectiveness Ratio
References:
Attachments? N
CROSS REFERENCES

Comment: EPA's estimate of cost-effectiveness ($8 - $12 per toxic pound equivalent) is considerably lower than the estimates prepared by others. The Bay Area Dischargers Association and the Novato Sanitary District calculated unit costs for copper removal to be in excess of several thousand dollars per toxic pound equivalent removed.

Response to: CTR-054-034

See response to CTR-040-039.

Comment ID: CTR-056-016
Comment Author: East Bay Municipal Util. Dist.
Document Type: Sewer Authority
State of Origin: CA
Represented Org:
Document Date: 09/22/97
Subject Matter Code: E-01g03 Cost Effectiveness Ratio
References: Letter CTR-056 incorporates by reference letter CTR-054
Attachments? N
CROSS REFERENCES

Comment: Finally, EBMUD has serious concerns about the accuracy of EPA's draft, Economic Analysis, particularly as it pertains to the cost and benefits estimates found in the draft CTR. We believe that the costs of the CTR are significantly underestimated and the benefits are inflated. On the cost side, there are several "flaws" which should be reevaluated:

* The representativeness of the sample used is questionable and should be reconsidered.

Response to: CTR-056-016

See responses to CTR-056-018 and CTR-059-018.

Comment ID: CTR-056-017
Comment Author: East Bay Municipal Util. Dist.
Document Type: Sewer Authority
State of Origin: CA
Represented Org:
Document Date: 09/22/97

Subject Matter Code: E-01g03 Cost Effectiveness Ratio
References: Letter CTR-056 incorporates by reference letter CTR-054
Attachments? N
CROSS REFERENCES

Comment: Finally, EBMUD has serious concerns about the accuracy of EPA's draft, Economic Analysis, particularly as it pertains to the cost and benefits estimates found in the draft CTR. We believe that the costs of the CTR are significantly underestimated and the benefits are inflated. On the cost side, there are several "flaws" which should be reevaluated:

* The omission of those impacts on those "dischargers" which contribute to loading such as: small indirect dischargers, municipal and industrial stormwater dischargers, agricultural activities and non-point sources, and therefore would be expected to reduce their loading.

Response to: CTR-056-017

See responses to CTR-056-018, CTR-021-006b, and CTR-040-037.

Subject Matter Code: E-01g04 AMLs vs. MDLs

Comment ID: CTR-021-010
Comment Author: LeBoeuf, Lamb, Green & MacRae
Document Type: Local Government
State of Origin: CA
Represented Org: City of Sunnyvale
Document Date: 09/25/97
Subject Matter Code: E-01g04 AMLs vs. MDLs
References: Letter CTR-021 incorporates by reference letter CTR-035
Attachments? Y
CROSS REFERENCES

Comment: The CTR Analysis Incorrectly Evaluates Permit Compliance By Using an Average Monthly Effluent Limit Rather than the California Regional Board's Maximum Effluent Limit

The EPA analysis assumes that the limit to be achieved, either 4.9 or the potential CTR limit of 5.55 ug/L is a monthly average limit. The current state NPDES permit cites the limit as a 1-day average limit, based on the San Francisco Basin Plan's 1-hour marine water quality objective.

Sunnyvale's 1994-1996 weekly effluent copper data (155 data points) had a mean of 4.3 ug/L, but a maximum of 9 ug/L, a 99%tile of 8.9 ug/L and a 95%tile of 7.0 ug/L.

The CTR economic analysis (Appendix Table I-B-3) calculated average monthly limits (AML) of 5.5 ug/L and maximum daily limits (MDL) of 9.27 ug/L for copper. EPA needs to specify if the State is currently in error in its interpretation and implementation of effluent limits in this manner. Furthermore, the CTR should clarify if this means that it is acceptable for States to calculate and include monthly average (30-day) limits in NPDES permits based on the proposed CCC criteria and the TSD based methodology used in the economic analysis (and similarly daily average limits based on the proposed CMC criteria).

Based on current State permits the economic analysis must be corrected since the threshold for determining whether or not additional measures would be required to comply with the CTR is based on a comparison with average, not maximum values. As noted above, unless EPA is redefining the chronic averaging period as monthly instead of 4-day (or 1-day), Sunnyvale can not achieve a 4.9 or 5.5 ug/L copper effluent limit (WPCP effluent is above this limit approximately 30-40% of the time). Other dischargers to San Francisco Bay that aren't allowed dilution credit face the same compliance problem and will require additional treatment to meet a 1 or 4-day limit in that range. Therefore, extrapolation of the CTR analysis to other dischargers is not appropriate an d will lead to erroneous results and misleading conclusions.

Response to: CTR-021-010

This comment refers to Sunnyvale's previous one-day average copper limit. The previous permit limit was based on the underlying national criteria (saltwater) in effect at that time [2.9 ug/L for both the chronic aquatic life (CCC) and acute aquatic life (CMC)]. The State was not in error in implementing the above criteria as a one-day average limit. In the CTR, the saltwater copper CMC has been revised to 4.8 ug/L dissolved and the CCC has been revised to 3.1 ug/L dissolved. The revised CCC should not be implemented directly as a one-day average. EPA recommends that the State calculate both average

monthly limits and maximum daily limits based on the chronic and acute criteria using the U.S. EPA Technical Support Document (TSD) approach (1991). Therefore, EPA used the TSD approach in the Economic Analysis to estimate facility compliance with CTR-based WQBELs.

Reference: U.S. EPA. 1991. Technical Support Document for Water Quality-based Toxics Control. EPA/505/2-90-001

Subject Matter Code: E-01g05 Effluent Data

Comment ID: CTR-040-027
Comment Author: County of Sacramento Water Div
Document Type: Storm Water Auth.
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: E-01g05 Effluent Data
References: Letter CTR-040 incorporates by reference letter CTR-027
Attachments? Y
CROSS REFERENCES

Comment: Although EPA goes to great length to label its cost analysis as "conservative" the analysis is anything but conservative:

* It is not conservative to assume that if a discharger has no effluent data that the discharger will not incur costs as a result of the CTR.

Response to: CTR-040-027

If a discharger had no effluent data, EPA did not automatically assume that the discharger would have no costs as a result of the CTR. When effluent data was available, however, EPA used the method in EPA's Technical Support Document for Water Quality-based Toxics Control (1991) to determine reasonable potential and then followed the methodology (i.e., the cost-decision matrix) described in the Economic Analysis (EA) of the final CTR to estimate costs. In the abscence of data under the high scenario, reasonable potential was assumed if the discharger had an existing permit limit for a pollutant and EPA then estimated costs using the methodology described in the EA. See also response to CTR-003-011.

Comment ID: CTR-041-023
Comment Author: Sacramento Reg Cnty Sanit Dist
Document Type: Sewer Authority
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: E-01g05 Effluent Data
References:
Attachments? N
CROSS REFERENCES

Comment: Although EPA goes to great length to label its cost analysis as "conservative" the analysis is anything but conservative:

* It is not conservative to assume that if a discharger has no effluent data that the discharger will not incur costs as a result of the CTR.

Response to: CTR-041-023

See response to CTR-003-011.

Comment ID: CTR-044-018
Comment Author: City of Woodland
Document Type: Local Government
State of Origin: CA
Represented Org:
Document Date: 09/26/97
Subject Matter Code: E-01g05 Effluent Data
References:
Attachments? N
CROSS REFERENCES

Comment: Although EPA goes to great length to label its cost analysis as "conservative" the analysis is anything but conservative:

* It is not conservative to assume that if a discharger has no effluent data that the discharger will not incur costs as a result of the CTR.

Response to: CTR-044-018

See response to CTR-003-011.

Comment ID: CTR-054-022
Comment Author: Bay Area Dischargers Associati
Document Type: Sewer Authority
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: E-01g05 Effluent Data
References:
Attachments? N
CROSS REFERENCES

Comment: Although EPA goes to great length to label its cost analysis as "conservative" the analysis is anything but conservative:

* It is not conservative to assume that if a discharger has no effluent data that the discharger will not incur costs as a result of the CTR.

Response to: CTR-054-022

See response to CTR-003-011.

Comment ID: CTR-093-001

Comment Author: City of Merced
Document Type: Local Government
State of Origin: CA
Represented Org:
Document Date: 10/02/97
Subject Matter Code: E-01g05 Effluent Data
References:
Attachments? Y
CROSS REFERENCES

Comment: Pursuant to our conversations following the California Toxics Rule (CTR) hearing of 17 September, find enclosed 1994, 1995, and 1996 data from priority pollutant monitoring at the City of Merced Wastewater Treatment Facility. It is our understanding that the information will be utilized to refine the economic impact analysis from the City of Merced Case Study.

One qualification we submit regarding the enclosed data is that cyanide, dutifully reported as having been detected in POTW effluent in 1994 and 1995, was likely not actually present. It has been demonstrated that nitrogen interference during cyanide analysis of chlorinated samples will often result in falsely positive results. To prevent this, EPA has approved a sulfamic acid scrubbing procedure to counter the interference. That procedure was not practiced by our analyzing laboratories until 1996. No contributor of cyanide has been identified in Merced, and, it has never been detected either at the influent or primary effluent of our plant. The sulfamic acid scrubbing procedure was incorporated in the analytical procedures during 1996, and there have been no detections of cyanide in POTW effluent since.

If there are any questions please do not hesitate to contact me at (209) 385-8693.

Response to: CTR-093-001

EPA has removed cyanide from its economic analysis for the final CTR because EPA's analysis of existing data and facility information resulted in no determinations of reasonable potential for cyanide.

Subject Matter Code: E-01g06 Reasonable Potential

Comment ID: CTR-021-016
Comment Author: LeBoeuf, Lamb, Green & MacRae
Document Type: Local Government
State of Origin: CA
Represented Org: City of Sunnyvale
Document Date: 09/25/97
Subject Matter Code: E-01g06 Reasonable Potential
References: Letter CTR-021 incorporates by reference letter CTR-035
Attachments? Y
CROSS REFERENCES

Comment: Appendix Ill-B states that "The existing permit limits and/or the maximum reported concentrations of copper, nickel, silver, endrin, 1,2-cichlorobenzene, chlorobenzene, chlorodichloromethane, and toluene are less stringent than the projected CTR-based limits".

* Copper: A reasonable potential analysis of plant performance data indicates that there is a reasonable potential under these grossly conservative and misleading assumptions to exceed both the CTR based maximum daily limit and the average monthly limit.

* Nickel, silver, and zinc: A reasonable potential analysis of plant performance data indicates that under these grossly conservative and misleading assumptions there is no reasonable potential to exceed the CTR based maximum daily limit. However, if the projected maximum concentrations are compared to the CTR based average monthly limit, there is a reasonable potential for the effluent concentrations to exceed these limits.

* Organic compounds: See notes for Appendix I-B above.

Response to: CTR-021-016

EPA revised its EA including the use of more recent data. In the revised EA, nickel, silver, and zinc have reasonable potential in the high-end scenario because the facility has existing permit limits, however no load reductions are estimated for these pollutants in either the low- or high-end scenarios.

See also responses to CTR-052-014 and CTR-021-017.

Subject Matter Code: E-01g08 Discharger Representation

Comment ID: CTR-034-014a
Comment Author: SCAP
Document Type: Trade Org./Assoc.
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: E-01g08 Discharger Representation
References: Letter CTR-034 incorporates by reference letter CTR-035
Attachments? N
CROSS REFERENCES E-01b
E-01e
E-01v
J

Comment: * In general, we are pleased that EPA prepared an analysis of the economic impacts of the proposed CTR, and that a major portion of EPA's work focused on determining the potential impacts on POTWs. However, we believe that this analysis is based on improper assumptions and inaccurate cost estimates, resulting in unconvincing conclusions. Detailed comments can be found in Attachment 2. A few of the areas of concern are listed below:

* Small facilities appear to be under represented in EPA's sample of POTWS, especially for minor dischargers.

* The cost triggers used as regulatory relief thresholds are unrealistic, and are not consistent with EPA regulations and policies.

* The assumptions used to determine cost estimates for indirect dischargers appear to omit a large proportion of potentially affected industries.

* The Economic Analysis does not take into account projected population and industrial growth over time, which may influence effluent quality and quantity. Statewide, the population is projected to grow by nearly 50% by 2020.

* The use of average cost estimates masks economic impacts on individual dischargers, which may be particularly acute for small communities.

* The economic Analysis ignores the costs that may be incurred by stormwater dischargers and nonpoint sources to reduce loadings so that CTR criteria may be met in ambient waters.

Response to: CTR-034-014a

See responses to CTR-032-004, CTR-035-061, CTR-021-006b, CTR-040-037, CTR-059-018, and CTR-035-048.

Comment ID: CTR-035-008a
Comment Author: Tri-TAC/CASA

Document Type: Trade Org./Assoc.
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: E-01g08 Discharger Representation
References:
Attachments? N
CROSS REFERENCES E-01e
E-01d
E-01m
E-01h
E-01c

Comment: Finally, we have serious concerns about the accuracy of the draft Economic Analysis and the estimates of the costs and benefits of the draft CTR (see detailed comments in Attachments I and 2). Our primary concerns related to the cost analysis include 1) that the case studies on which the cost analysis is based do not adequately represent the actual population of POTWs in California; 2) the omission of costs that could be incurred by many sectors that contribute to overall loadings, and, hence, can be expected to have to reduce their loadings (e.g., non-SIU indirect dischargers, municipal and industrial stormwater dischargers, agricultural activities, and other nonpoint sources of CTR-regulated pollutants); 3) the use of numerous assumptions that underestimate costs; and 4) the capricious removal of costs that exceed threshold values by assuming that regulatory relief measures will be granted, despite the lack of any proposed regulatory relief trigger in the proposed regulation.

To illustrate the degree of underestimation of costs for the POTW sector alone, we looked at potential compliance costs for the POTW sector. We found that the potential costs for 23 major POTWS. on an annualized basis, may reach $400 million. We believe that this analysis demonstrates that the potential cost consequences of compliance with effluent limits based on the proposed CTR criteria would easily exceed the $ 100 million annual cost threshold, especially when the costs of all 313 POTWs in the State are estimated. Thus, we believe that EPA must conclude that the proposed CTR could have significant economic impacts on local governments.

Response to: CTR-035-008a

See responses to CTR-021-005c, CTR-032-004, CTR-040-039, CTR-021-006b, CTR-040-037, and CTR-059-018.

Comment ID: CTR-035-046a
Comment Author: Tri-TAC/CASA
Document Type: Trade Org./Assoc.
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: E-01g08 Discharger Representation
References:
Attachments? N
CROSS REFERENCES E-01g09

Comment: pp. 2-4 - 2-9 (U.S. EPA, 1997b) -- Sampling Strategy In general terms, we support EPA's methodology of stratified sampling to determine costs, although it is not clear whether the POTW sample was stratified appropriately. We believe that inadequate evidence is presented that the sample of case studies reflects the overall population of POTWs, and that extrapolation based on the sample would truly reflect total POTW costs. Little explanation is provided as to how the case study facilities were selected, and little evidence is presented demonstrating the validity of extrapolating from the small sample to the impacted population of POTWs. In particular, we believe that minor facilities were under-represented, and that it is invalid to assure that none of the 185 minor POTWs will incur any costs. We also believe that larger samples of facilities from 0-10 MGD and from 10-100 MGD also would be necessary to obtain valid estimates of POTW costs. In addition, by assuming that existing facilities that contain effluent limits for toxic pollutants were representative facilities and using them as the basis for extrapolation to the universe of potentially affected facilities, EPA may have failed to include a major category of costs. By ignoring the costs of those facilities meeting their current permit limits, EPA is assuming that the facilities they are extrapolating to have similar current permit limits, which was not demonstrated to be the case. Therefore, EPA should reexamine the use of this assumption in the analysis of POTW costs.

Response to: CTR-035-046a

EPA believes that the sample facilities adequately represent the universe of facilities in California. Facilities within the sample demonstrate both compliance and non-compliance with projected CTR limits and, although the sample may not exactly represent the actual proportion of facilities not in compliance with limits, EPA believes that the overall economic analysis uses conservative cost estimation techniques which actually overstate costs. See also response to CTR-059-018.

Comment ID: CTR-035-063
Comment Author: Tri-TAC/CASA
Document Type: Trade Org./Assoc.
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: E-01g08 Discharger Representation
References:
Attachments? N
CROSS REFERENCES

Comment: Weaknesses in Cost Analysis The report's cost estimates exhibit a number of significant weaknesses, as follows:

* Potential impacts on non-point sources merit greater attention than given them in the Analysis. Since non-point sources (e.g., mining/mine tailings; agricultural drainage/runoff; urban runoff/stormwater) are responsible for the great majority of potentially harmful discharges, they will almost certainly be affected by the proposed Rule. Likewise, these sources must be addressed if the benefits estimated by USEPA are to be obtained. Greater examination of these costs would be no more speculative than many of the benefit estimates shown in the report.

Response to: CTR-035-063

See response to CTR-021-006b.

Comment ID: CTR-038-004a
Comment Author: Sonoma County Water Agency
Document Type: Sewer Authority
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: E-01g08 Discharger Representation
References:
Attachments? Y
CROSS REFERENCES E-01h
E-01m
E-01c02

Comment: 4. The economic analysis is seriously flawed. The major flaws include: (1) failing to do an appropriate sampling of dischargers having little or no dilution; (2) assuming in the high-end cost scenario that a 25% reduction could be achieved through source control and an additional 25% achieved through treatment plant optimization without capital improvements; (3) constraining estimates of potential costs through key assumptions, including the assumption that regulatory relief from the rule would be granted if costs were in excess of certain thresholds; and (4) exaggerating estimates of potential benefits by assuming an end (i.e., achievement of the proposed water quality criteria) that will not result from the rule. The result of these flaws is that potential costs are greatly understated and potential benefits are greatly overstated. The District's analysis demonstrates that actual costs may be an order of magnitude greater than EPA's $500/lb threshold and that the benefits are very small.

Response to: CTR-038-004a

See responses to CTR-054-013a, CTR-032-004, CTR-021-008, CTR-040-029a, and CTR-056-018.

Comment ID: CTR-040-024
Comment Author: County of Sacramento Water Div
Document Type: Storm Water Auth.
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: E-01g08 Discharger Representation
References: Letter CTR-040 incorporates by reference letter CTR-027
Attachments? Y
CROSS REFERENCES

Comment: EPA erroneously assumes that minor POTW dischargers (i.e., those with a permitted flow of less than 1.0 mgd) will not incur significant impacts as a result of the CTR.

Response to: CTR-040-024

For analysis of the final CTR, EPA updated its Economic Analysis to reflect the most recent data and information for each sample facility and also increased the sample size for minor facilities. Based on this revised analysis, EPA estimated that minor POTWs will incur costs of approximately $5,000 per facility per year under the low cost scenario and $7,800 per facility per year under the high cost scenario. See also response to CTR-058-018.

Comment ID: CTR-041-020
Comment Author: Sacramento Reg Cnty Sanit Dist
Document Type: Sewer Authority
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: E-01g08 Discharger Representation
References:
Attachments? N
CROSS REFERENCES

Comment: EPA erroneously assumes that minor POTW dischargers (i.e., those with a permitted flow of less than 1.0 mgd) will not incur significant impacts as a result of the CTR.

Response to: CTR-041-020

See responses to CTR-059-018 and CTR-040-024.

Comment ID: CTR-044-005a
Comment Author: City of Woodland
Document Type: Local Government
State of Origin: CA
Represented Org:
Document Date: 09/26/97
Subject Matter Code: E-01g08 Discharger Representation
References:
Attachments? Y
CROSS REFERENCES E-01h01
E-01m
E-02c
E-01c02
R
S

Comment: We have reviewed the proposed CTR and offer the following comments:

4. EPA's Economic Analysis is seriously flawed. The major flaws include:

(1) failing to do an appropriate sampling of small dischargers having little or no dilution; (2) assuming in the high-end cost scenario that a 25% reduction could be achieved through source control and an

additional 25% achieved through treatment plant optimization without capital improvements; (3) constraining estimates of potential costs through key assumptions, including the assumption that regulatory relief from the rule would be granted if costs were in excess of certain thresholds; and (4) exaggerating estimates of potential benefits by assuming an end (i.e., achievement of the proposed water quality criteria) that will not result from the rule. Additional concerns with the economic analysis are presented in Exhibit F. The result of these flaws is that potential costs are greatly understated and potential benefits are greatly overstated. Moreover, the flawed economic analysis has lead to the erroneous conclusion that the CTR is not a "significant regulatory action" or major rule subject to Presidential Executive Order 12866 and the Unfunded Mandates Reform Act or a rule that affects small entities protected under the Regulatory Flexibility Act. The City, for example, is a small community having a population of under 50,000 and would be greatly impacted by the proposed rule.

Response to: CTR-044-005a

See responses CTR-054-013a, CTR-021-005c, CTR-032-004, CTR-021-008, CTR-040-029a, CTR-056-018, CTR-059-018, and CTR-035-046a.

Comment ID: CTR-044-015
Comment Author: City of Woodland
Document Type: Local Government
State of Origin: CA
Represented Org:
Document Date: 09/26/97
Subject Matter Code: E-01g08 Discharger Representation
References:
Attachments? N
CROSS REFERENCES

Comment: EPA erroneously assumes that minor POTW dischargers (i.e., those with a permitted flow of less than 1.0 mgd) will not incur significant impacts as a result of the CTR.

Response to: CTR-044-015

See response to CTR-040-024.

Comment ID: CTR-045-009a
Comment Author: Sausalito-Marin Sanitary Dist.
Document Type: Sewer Authority
State of Origin: CA
Represented Org:
Document Date: 09/24/97
Subject Matter Code: E-01g08 Discharger Representation
References:
Attachments? Y
CROSS REFERENCES E-01h
E-01m

Comment: The draft Economic Analysis has serious flaws. It underestimates the costs of the draft CTR and overestimates the benefits. For the cost analysis, EPA should reevaluate the representativeness of the sample used; the omission of impacts on many sectors that contribute to loadings, and hence, can be expected to have to reduce their loadings (e.g., small indirect dischargers, municipal and industrial stormwater dischargers, agricultural activities, and other nonpoint sources); the incorporation of numerous assumptions that underestimate costs; and the assumption to artificially remove costs that exceed threshold values by assuming that regulatory relief measures will be granted, despite the fact that they are not automatically granted through triggers included as part of the proposed regulation.

Response to: CTR-045-009a

See responses to CTR-032-004, CTR-056-018, CTR-021-006b, and CTR-059-018.

Comment ID: CTR-049-006a
Comment Author: Watereuse Assoc. of California
Document Type: Trade Org./Assoc.
State of Origin: CA
Represented Org:
Document Date: 09/24/97
Subject Matter Code: E-01g08 Discharger Representation
References:
Attachments? N
CROSS REFERENCES E-01h
E-01m

Comment: With respect to other criteria proposed for adoption in the draft CTR, we recommend that USEPA:

4. Review and correct existing flaws in the current "Economic Analysis."

With respect to the Economic Analysis conducted by USEPA, we are concerned that it underestimates the cost of the proposed CTR rule while overestimating its benefits. We suggest that USEPA re-evaluate (1) the representativeness of the sample used; (2) the omission of impacts on many sectors that contribute to loadings; (3) the incorporation of a variety of assumptions that underestimate costs; and (4) the assumption to artificially remove costs that exceed threshold values by incorrectly assuming that regulatory relief measures will be granted. For the benefits analysis, USEPA should utilize more California-specific and recent information. A further problem with the analysis relates to the establishment of criteria that are below analytical detection. Lacking credible data, it was not possible to conduct cost-benefit analyses or determine that any set of control measures would or could lead to compliance. This fundamental inability to utilize established rulemaking procedures requires, in our opinion, further work prior to the promulgation of the criteria.

Response to: CTR-049-006a

See responses CTR-045-011, CTR-032-004, CTR-056-018, CTR-021-006b, CTR-059-018, and CTR-052-014.

Comment ID: CTR-054-019
Comment Author: Bay Area Dischargers Associati
Document Type: Sewer Authority
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: E-01g08 Discharger Representation
References:
Attachments? N
CROSS REFERENCES

Comment: EPA erroneously assumes that minor POTW dischargers (i.e., those with a permitted flow of less than 1.0 mgd) will not incur significant impacts as a result of the CTR.

Response to: CTR-054-019

See responses to CTR-059-018 and CTR-040-024.

Comment ID: CTR-059-018
Comment Author: Los Angeles County Sanit. Dist
Document Type: Sewer Authority
State of Origin: CA
Represented Org:
Document Date: 09/26/97
Subject Matter Code: E-01g08 Discharger Representation
References: Letter CTR-059 incorporates by reference letter CTR-035

Attachments? Y
CROSS REFERENCES

Comment: Economic Analysis

The Sanitation districts commends EPA for preparing an analysis of the economic impacts of the proposed CTR, and for selecting POTWs for half of the case studies. We believe that EPA is correct in thinking that POTWs are likely to experience major impacts as a result of the promulgation of the CTR. However, we believe that this analysis is based on improper assumptions and inaccurate cost estimates, resulting in unconvincing conclusions. Our own attainability and cost analysis indicates that there are indeed fundamental flaws in the cost analysis. A few of the areas of concern are listed below:

* Small facilities appear to be under-represented in EPA's sample of POTWs, especially for minor dischargers.

Response to: CTR-059-018

EPA acknowledges that evaluating the impact of each individual direct discharger to inland waters, enclosed bays, and estuaries within the State of California would be the most accurate method to determine impacts of the CTR. However, the resources that would be required to perform such an analysis for each of the over 1,241 direct dischargers are beyond the resources typically available for

development of environmental regulations. EPA would have considered well-documented information submitted in comments.

In developing the methodology for estimating the compliance costs for the proposed CTR, time and budget constraints limited EPA's costing review to a subset of the regulated community. However, EPA believes that the sample selected adequately represents the various types of direct dischargers in the State.

EPA acknowledges that minor dischargers were under sampled as compared to the major dischargers. However, by definition, under the NPDES permit program, facilities classified as minor would not be expected to discharge toxic pollutants in toxic amounts. Since the CTR addresses only toxic pollutants, EPA would not expect significant, if any, impact to minor dischargers.

In analyses of the final CTR, EPA increased the sample of minors by five randomly selected facilities to bolster its analysis. EPA estimated costs of $872 per minor facility under the low scenario, and $2,682 per minor facility under the high scenario due to the CTR.

EPA also replaced Silvergate with South Bay in the sample in order to improve the estimate of the impacts of the CTR on the electric utility industry. The draft CTR cost analysis included costs for Silvergate, but the facility had closed and the data available were over five years old. The addition of South Bay, an electric utility facility with no costs, to the sample results in a more realistic, lower overall cost estimate for the electric utility industry.

Comment ID: CTR-059-023a
Comment Author: Los Angeles County Sanit. Dist
Document Type: Sewer Authority
State of Origin: CA
Represented Org:
Document Date: 09/26/97
Subject Matter Code: E-01g08 Discharger Representation
References: Letter CTR-059 incorporates by reference letter CTR-035

Attachments? Y
CROSS REFERENCES J

Comment: Economic Analysis

The Sanitation Districts commends EPA for preparing an analysis of the economic impacts of the proposed CTR, and for selecting POTWs for half of the case studies. We believe that EPA is correct in thinking that POTWs are likely to experience major impacts as a result of the promulgation of the CTR. However, we believe that this analysis is based on improper assumptions and inaccurate cost estimates, resulting in unconvincing conclusions. Our own attainability and cost analysis indicates that there are indeed fundamental flaws in the cost analysis. A few of the areas of concern are listed below:

* The Economic Analysis ignores the costs that may be incurred by stormwater dischargers and nonpoint sources to reduce loadings so that CTR criteria may be met in ambient waters.

Response to: CTR-059-023a

See response to CTR-021-006b.

Comment ID: CTR-060-017
Comment Author: San Diego Gas and Electric
Document Type: Electric Utility
State of Origin: CA
Represented Org:
Document Date: 09/26/97
Subject Matter Code: E-01g08 Discharger Representation
References:
Attachments? N
CROSS REFERENCES

Comment: PROVISIONS SDG&E DOES NOT SUPPORT

As described in the following comments SDG&E does not support the following provisions:

Economic Analysis is deficient

EPA's economic analysis evaluated a number of discharger categories to estimate the potential costs associated with the adoption of these criteria. One discharger category was electric utilities which evaluated the costs to power plants. EPA's analysis of the electric utility category was deficient for at least two reasons. First, the analysis included two relatively small power plants. Specifically, the assessment included Pacific Gas & Electric's Hunter Point Power Plant (HPPP) and SDG&E's Silver Gate Power Plant (SGPP). Both the HPPP and SGPP are relatively small plants (generating capacities are approximately 396 MW and 230 MW, respectively). The SGPP is no longer in operation and its NPDES permit was rescinded in 1995. In fact, the economic analysis did not evaluate costs to the SGPP because it had not operated for several years. Both PG&E and SDG&E have plants affected by this rule which are larger (e.g., Pittsburgh at 2,060 MW and South Bay Power Plant at 709 MW). Consequently, the cost estimates for the entire category were based on only one small facility representing one water body and are therefore not likely to be representative of the actual costs that will be incurred by electric utilities.

Response to: CTR-060-017

See response to CTR-059-018.

Comment ID: CTR-066-013a
Comment Author: Delta Diablo Sanitation Dist.
Document Type: Sewer Authority
State of Origin: CA
Represented Org:
Document Date: 09/26/97
Subject Matter Code: E-01g08 Discharger Representation
References:
Attachments? N
CROSS REFERENCES E-01b01

Comment: The areas with which we find concerns and the requested changes include the following:

* The draft Economic Analysis has, from our short review, some serious flaws. It underestimates the costs of the draft to implement the CTR and overestimates the benefits. For the cost analysis, EPA should re-evaluate the representativeness of the sample used; the omission of impacts on many sectors that contribute to loadings and, therefore, can be expected to have to reduce their loadings (e.g., small indirect dischargers, municipal and industrial stormwater dischargers, agricultural activities, and other nonpoint sources); the incorporation of numerous assumptions that underestimate costs; and your assumption that artificially removes costs that exceed threshold values be assuming that regulatory relief measures will be granted, despite the fact that they are not automatically granted through triggers included as part of the proposed regulation.

Response to: CTR-066-013a

See responses to CTR-032-004, CTR-056-018, CTR-021-006b, and CTR-059-018.

Comment ID: CTR-082-007a
Comment Author: City of Burbank
Document Type: Local Government
State of Origin: CA
Represented Org:
Document Date: 09/24/97
Subject Matter Code: E-01g08 Discharger Representation
References:
Attachments? N
CROSS REFERENCES E-01b
B Comment Period

Comment: The subject rule has a significant impact on our facility discharge and the citizens of the City. We therefore present the following comments for your consideration to re-open the comment period for this rule in order to facilitate a more complete review by public and in particular by those in the POTW community:

* The draft economic analysis seems to have serious flaws. It under-estimates the cost of the draft CTR and overstates the benefits. In the cost analysis USEPA should re-evaluate the representativeness of samples used and the omission of impacts on many factors that contribute to loadings, and hence, can be expected to have to reduce their loadings (e.g., small indirect dischargers, municipal and industrial stormwater dischargers, agricultural activities, and other nonpoint sources); the incorporation of numerous assumptions that underestimate costs, and the assumption to artificially remove costs that exceed threshold values by assuming that regulatory relief measures will be granted, despite the fact that they are not automatically granted through triggers included as part of the proposed regulation.

Response to: CTR-082-007a

See responses to CTR-032-004, CTR-056-018, CTR-021-006b, and CTR-059-018.

Comment ID: CTR-085-016a
Comment Author: Camarillo Sanitary District
Document Type: Sewer Authority
State of Origin: CA
Represented Org:
Document Date: 09/24/97
Subject Matter Code: E-01g08 Discharger Representation
References:
Attachments? N
CROSS REFERENCES E-01b01

Comment: The District supports the following positions of CASA and SCAP where changes need to be made in the proposed California Toxics Rule:

* The District agrees with CASA and SCAP that the economic analysis has serious flaws. It underestimates the costs of the draft California Toxics Rule and overestimates the benefits. For the cost analysis, the EPA should evaluate the representativeness of the sample used; the omission of impacts on many sectors that contribute to loadings and hence, can be expected to reduce their loadings (i.e., small indirect dischargers, municipal and industrial stormwater dischargers, agricultural activities and other non-point sources); the incorporation of numerous assumptions that under estimates the costs; and the assumption to artificially remove costs that exceed threshold values by assuming that regulatory relief measures will be granted, despite the fact that they are not automatically granted through triggers included as part of the proposed regulation.

Response to: CTR-085-016a

See responses to CTR-032-004, CTR-056-018, CTR-021-006b, and CTR-059-018.

Comment ID: CTRH-001-058
Comment Author: Dave Tucker
Document Type: Public Hearing
State of Origin: CA
Represented Org: San Jose Env. Serv. Dept.
Document Date: 09/17/97
Subject Matter Code: E-01g08 Discharger Representation
References:
Attachments? N
CROSS REFERENCES

Comment: There are some things that we do have some concerns with, and that is the uncertainties and assumptions made in the economic analysis.

Although the City strongly believes that California needs certainty in its water quality program process as well as implementation, we are concerned about the potential precedents being set by some uncertainties and assumptions in the federal economic analysis of cost and benefits.

Although the City supported the OMB waiver in order to expedite the standards program promulgation process in California, we are very concerned with what may be potential faults in the federal analysis that

could be carried over to the state planning process.

There are differences between the federal and state acceptance processes. Where the state process requires a much more in-depth analysis of cost incurred by any state water quality planning process, the City believes greater attention should be placed upon nonpoint source control program costs, potential costs that could be incurred to meet criteria now set below detectability, as well as any hidden costs that may be associated with some of the uncertainties and assumptions in the federal financial analysis.

Again, the City will provide much greater detail in its written comments by the end of next week. We thank you for the opportunity to comment and look forward to working with you in the future.

Thank you.

Response to: CTRH-001-058

See responses to CTR-045-011, CTR-02-006b, CTR-021-004, and CTR-004-002.

Subject Matter Code: E-01g09 Affected Facilities

Comment ID: CTR-021-004
Comment Author: LeBoeuf, Lamb, Green & MacRae
Document Type: Local Government
State of Origin: CA
Represented Org: City of Sunnyvale
Document Date: 09/25/97
Subject Matter Code: E-01g09 Affected Facilities
References: Letter CTR-021 incorporates by reference letter CTR-035
Attachments? Y
CROSS REFERENCES

Comment: It is with a sense of reluctance that Sunnyvale joins in CASA/Tri-TAC's adverse comments on the CTR and the EA, and Sunnyvale does so in a spirit of constructive criticism and with an expectation that the Agency will make the necessary adjustments in its approach towards the CTR before the final rule is promulgated. In addition, in the same spirit and with the same expectation, Sunnyvale would like to make the following points on its own behalf:

1. The Inadequacies of the EA. Sunnyvale is gravely concerned that the EA has significantly missed the mark in assessing Sunnyvale's potential costs to comply with the criteria in the CTR. As pointed out in greater detail in the EOA Letter, the methodology used in the EA is fraught with analytical errors and unfounded assumptions, leading to many unanswered questions regarding the costs which Sunnyvale may face in coming into compliance with CTR-based effluent limitations. Accordingly, Sunnyvale urges EPA in the strongest terms not to use Sunnyvale as a representative facility to extrapolate cost information to the remainder of California until the EA is re-done. Use of the EA analysis at this point will result in erroneous, unfounded and misleading results which would be a disservice to EPA's ethical and legal obligations.

We are particularly concerned about the EA's unsupported assumption that Sunnyvale can easily close the gap between current discharge levels for copper and the CTR level for that metal merely by more stringent application of source controls. Sunnyvale already has one of the most stringent source control programs in the U.S., developed after years of careful analysis and in cooperation with the Regional Water Quality Control Board and representatives of a vigorous and concerned environmental community. The available effluent improvements from this avenue have long ago been achieved. The misplaced assumption in the EA tends to grossly and arbitrarily understate costs associated with compliance, particularly the potential for requiring reverse osmosis as the only availablemeans of achieving concentration levels seemingly mandated by the proposed CTR.

Further, we strongly urge EPA to make clear that the overall methodology and approach used in the EA is neither appropriate nor legally sufficient for use by the State of California in promulgating its implementation plan or in promulgating State criteria for the pollutants addressed in the CTR. The gross inadequacies in the EA, which are depicted in the CASA/Tri-TAC letter, could not withstand judicial scrutiny under California's Porter-Cologne Act.

Response to: CTR-021-004

The City of Sunnyvale states that its present source control program is one of the most stringent in the country and that reverse osmosis would be required for compliance with a CTR-based effluent limit for

copper. EPA's revised cost analysis for Sunnyvale indicates that the facility is in compliance with the CTR-based effluent limit for copper and that the addition of reverse osmosis is not justified. As indicated in the Technical Support Document for the Economic Analysis of the Final CTR, the City of Sunnyvale reported one discharge observation for copper between January 1995 and December 1997 above the projected effluent limit for copper (8.03 ug/L). This single exceedance was 8.4 ug/L which is only 4% above the CTR-based permit limit. EPA believes that this violation frequency and the magnitude of the violation do not justify addition of reverse osmosis. Moreover, the projected pollutant loading reduction would likely have minimum pollution control costs. These costs would be associated with controlling discharges of copper using pollution prevention, or by optimizing existing processes (e.g., individual units performance under peak flows or critical conditions) at the POTW.

Note that EPA calculated the projected effluent limit for the City of Sunnyvale using a metal translator factor of 2.6 and a saltwater dissolved criterion of 3.1 ug/L. Additionally, the projected limit used was adjusted using statistical methods to account for effluent variability and different averaging periods. The resulting effluent limit is comparable to the copper limit established in the 1998 NPDES permit issued to the facility (8.6 ug/L).

The State is not required to use the EPA's Economic Analysis (EA) in promulgating its proposed implementation plan. While EPA and the State have worked very closely to gather the data necessary to develop their respective economic analyses, the State's economic analysis for its proposed implementation plan is different than EPA's. The State tailored the information gathered and reported in the EPA's EA to reflect the specific proposed policies in the State plan.

Although EPA disagrees with commenters that claim that EPA's EA is inappropriate for use by the State, EPA does believe that the State is under no obligation to use EPA's EA and may choose alternative methodologies for its economic analysis in support of State water quality policy or regulation.

See responses to CTR-021-017 and CTR-035-011a.

Comment ID: CTR-035-046b
Comment Author: Tri-TAC/CASA
Document Type: Trade Org./Assoc.
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: E-01g09 Affected Facilities
References:
Attachments? N
CROSS REFERENCES E-01g08

Comment: pp. 2-4 - 2-9 (U.S. EPA, 1997b) -- Sampling Strategy In general terms, we support EPA's methodology of stratified sampling to determine costs, although it is not clear whether the POTW sample was stratified appropriately. We believe that inadequate evidence is presented that the sample of case studies reflects the overall population of POTWs, and that extrapolation based on the sample would truly reflect total POTW costs. Little explanation is provided as to how the case study facilities were selected, and little evidence is presented demonstrating the validity of extrapolating from the small sample to the impacted population of POTWs. In particular, we believe that minor facilities were under-represented, and that it is invalid to assure that none of the 185 minor POTWs will incur any costs. We also believe

that larger samples of facilities from 0-10 MGD and from 10-100 MGD also would be necessary to obtain valid estimates of POTW costs. In addition, by assuming that existing facilities that contain effluent limits for toxic pollutants were representative facilities and using them as the basis for extrapolation to the universe of potentially affected facilities, EPA may have failed to include a major category of costs. By ignoring the costs of those facilities meeting their current permit limits, EPA is assuming that the facilities they are extrapolating to have similar current permit limits, which was not demonstrated to be the case. Therefore, EPA should reexamine the use of this assumption in the analysis of POTW costs.

Response to: CTR-035-046b

See responses to CTR-059-018 and CTR-040-024.

Comment ID: CTR-035-048
Comment Author: Tri-TAC/CASA
Document Type: Trade Org./Assoc.
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: E-01g09 Affected Facilities
References:
Attachments? N
CROSS REFERENCES

Comment: pp. 2-36 - 2-37 (U.S. EPA, 1997b) -- Use of Average Cost Estimates for Extrapolation EPA's use of average costs to estimate individual POTW costs masks a significant range in expenditures, indicating that some communities will be much more significantly impacted than others. By using averages for extrapolation rather than the full range, total cost estimates are likely to be severely underestimated.

Response to: CTR-035-048

EPA selected sample facilities in order to represent different industry categories, but also various facility sizes with different flow magnitudes. For example, EPA analyzed POTW facilities which fell into three flow categories representing facilities serving very large, medium, and small communities. Costs were averaged for the sample facilities within each flow category for an industry type and then extrapolated to the universe of facilities which matched the industry type and the range in flow for that flow category. Thus, costs calculated for facilities operating in very large communities would not be applied to facilities serving very small communities. See also response to CTR-059-018.

Subject Matter Code: E-01g10 Toxic Pound Equivalents

Comment ID: CTR-052-012
Comment Author: East Bay Dischargers Authority
Document Type: Sewer Authority
State of Origin: CA
Represented Org:
Document Date: 09/26/97
Subject Matter Code: E-01g10 Toxic Pound Equivalents
References: Letter CTR-052 incorporates by reference letters CTR-035 and CTR-054
Attachments? Y
CROSS REFERENCES

Comment: Cost per Toxic Pound Removed

Removal of copper by pollution prevention methods would be marginally cost effective. Pollution prevention of 10% of the Authority's annual copper load would result in a removal of 262 pounds per year from the Bay. Using the toxic weight factor from the EA, 0.47 results in a removal of 123 toxic pounds. Using the annual cost of $56,952 from the Larry Walker analysis results in a removal cost of $462 per pound. This approaches the high end of $500 per pound cited by EPA.

Removal of organics would not be cost effective. No toxic weights are listed for the PAHS, so this analysis is only for Heptachlor, which has a toxic weight of 4,100. Assuming that carbon adsorption removes 95% of the Heptachlor, and using the maximum recorded value of 0.018 ug/L results in the following:

(0.95)(0.018 ug/L)(4,100)(65 MGD)(365 days/year)(8.34 lbs/gal)(1 mg/l000 ug)=

13,872 toxic pounds per year

Using the annualized cost for carbon adsorption of $44,200,000 per year results in a removal cost of $3,186 per toxic pound. This figure is 6-16 times the threshold cost range cited by EPA of $200-$500 per toxic pound. In actual practice, the costs would even be higher since much of the data is non-detect with MDLs as low as 0.007 ug/L.

Response to: CTR-052-012

See response to CTR-004-003.

Subject Matter Code: E-01h Treatment Assumptions

Comment ID: CTR-003-011
Comment Author: City of Riverside
Document Type: Local Government
State of Origin: CA
Represented Org:
Document Date: 09/22/97
Subject Matter Code: E-01h Treatment Assumptions
References:
Attachments? N
CROSS REFERENCES

Comment: 11) What justification does the EPA have for assuming that, "If all monitoring data reported for a facility were reported as below analytical detection levels, even if the reported detection limit was above EPA approved analytical method detection levels, it was assumed that no reasonable potential existed to exceed CTR-based WQBELs".? Can permit holders make the same assumption to assess reasonable potential when applying for new permits?

Response to: CTR-003-011

The NPDES permit regulations in 40 CFR 122.44(d) and 123.25 require that WQBELs be derived for toxic pollutants that are discharged at a level that has a reasonable potential to exceed water quality standards. EPA believes that the approach used to determine reasonable potential to exceed CTR-based effluent limitations in its economic analysis was reasonable. This is particularly the case for the high cost scenario. Under this scenario, when any pollutant for which a limit for a toxic pollutant already existed in the current NPDES permit for a sample facility, it was assumed that a reasonable potential existed to exceed a CTR-based limit and the pollutant was included for further analysis. For pollutants that were not limited in the existing permit for a sample facility, but were detected in the effluent (as reported in the permit application, or as a result of special monitoring conditions contained in the NPDES permit), an analysis was conducted to determine if a reasonable potential existed to exceed CTR-based limits using the method recommended in EPA's Technical Support Document for Water Quality-based Toxics Control (1991). If all monitoring data reported for a facility were reported as below analytical detection levels, even if the reported detection limit was above EPA-approved analytical method detection levels, EPA assumed that no reasonable potential existed to exceed CTR-based WQBELs. Although EPA acknowledged in its economic analysis that this assumption could underestimate the impact of implementing the CTR, it most likely reflects the actual procedures that would be used by the State Regional Water Quality Control Boards (RWQCBs) because the discharger would not be subject to enforcement at any level below quantifiable analytical detection levels.

In estimating potential costs associated with the final rule, EPA also made an effort to ensure that all relevant and current information related to the possible presence of a pollutant in a sample facility discharge was collected. Specifically, all current information and data (including permits, fact sheets, permit applications, and other relevant discharge information) were updated and verified for each sample facility. In addition, each of the State RWQCBs were contacted to provide comments and additional information as necessary to ensure accurate reflection of current permit requirements and discharge conditions. Finally, permit and monitoring data submitted as a part of the public comments were reviewed and considered.

Reference: U.S. EPA. 1991. Technical Support Document for Water Quality-based Toxics Control. EPA/505/2-90-001

Comment ID: CTR-003-013
Comment Author: City of Riverside
Document Type: Local Government
State of Origin: CA
Represented Org:
Document Date: 09/22/97
Subject Matter Code: E-01h Treatment Assumptions
References:
Attachments? N
CROSS REFERENCES

Comment: 13) The City has reviewed those sections of the economic impact report which dealt directly with it's treatment plant. Although we have not had the time to address directly the cost impacts, we can comment on the assumptions that were used. EPA finds that we may have problems meeting metals objectives and suggests that they can be solved by chemically assisted clarification and additional pollution prevention/ waste minimization controls. It should be noted that the City has used both of these techniques for many years. With minor exceptions for waste minimization, it is unlikely that further reductions can be attained by either method. Waste minimization is cited as the answer to potential problems with chloroform. EPA needs to be aware that chloroform is a byproduct of the wastewater treatment process where chlorine disinfection is involved. Waste minimization will not help. It would be more appropriate to assume that the disinfection process would need to change to ultra violet or a similar non-chlorinated method. Capital costs would likely range around three to four million dollars with operating costs near one million dollars per year.

Response to: CTR-003-013

See response to CTR-004-003.

EPA agrees that chloroform is most likely a disinfection by-product (DBP) in wastewater treatment plants that use chlorination as the means for disinfection and that UV is an alternative technology that eliminates the presence of chloroform in the effluent. However, it should be noted that process optimization in the chlorination units is a viable and relatively low-cost pollution control alternative that can be used to reduce the discharge of chloroform and other DBPs (Truax, 1992; U.S. EPA, 1992; U.S. EPA, 1990) to levels in compliance with projected CTR-based limits. Process optimization is used to control DBPs in the final economic analysis of the CTR.

References:

Truax, Dennis D. 1992. "Optimization of Wastewater Treatment Plant Systems". Water Environment Research. 64(4): 400-02.

U.S. EPA. 1992. Standardized Costs for Water Supply Distribution Systems. Gummerman, R., Burris, B., and Burris D. EPA 600/R-92/009. Cincinnati, OH.

U.S. EPA. 1990. Optimized Water Treatment Plant Performance with the Composite Correction

Program. Summary Report. EPA 600/8-90/017. Cincinnati, OH.

Comment ID: CTR-021-009
Comment Author: LeBoeuf, Lamb, Green & MacRae
Document Type: Local Government
State of Origin: CA
Represented Org: City of Sunnyvale
Document Date: 09/25/97
Subject Matter Code: E-01h Treatment Assumptions
References: Letter CTR-021 incorporates by reference letter CTR-035
Attachments? Y
CROSS REFERENCES

Comment: The Estimated CTR Plant Optimization Compliance Costs for Sunnyvale are Under Estimated by One to Two Orders of Magnitude (10 to 100 times low)

The projected average cost per POTW under the high-end scenario of $480,000 per year (p. 4-12) is low by a factor of 10 to 100 based on Sunnyvale's situation and analysis (as cited in Appendix I-B-11). There is no support provided for the key assumption that "many of the sample facilities already possessed treatment processes that could be enhanced potentially to achieve CTR-based effluent limits" and "Therefore increased O&M was assumed adequate to comply with CTR-based effluent limits (as opposed to installing new treatment equipment). (p. 4-13).

Secondary treatment facilities with dual media filtration, such as Sunnyvale, are not specifically designed for metals or toxic organics removal. The removals that occur are an incidental function of the secondary biological treatment and solids separation processes. It is not technically possible to "dial-in" an additional 10-25% as has been assumed, particularly for facilities such a Sunnyvale, that already have low influent concentrations due to past implementation extensive source control, pollution prevention, and waste minimization measures. The presumption regarding plant optimization apparently mistakenly assumes that percent removal is a linear function instead of an asymptotic one. It is much more difficult to remove an additional 10-25% when the effluent contains only 5-10 ug/l versus say 20-50 ug/L when more of the copper is likely particulate (associated with solids) versus soluble and more amenable to removal through potential chemical addition to enhance solids removal.

Sunnyvale already achieves 85-90% metals removal and the majority of metals remaining are in the dissolved form. This information was submitted to EPA, as input for the Case Study, in an EOA September 23, 1996 memo (incorporated herein by reference). As stated in that memo, the low-end treatment option (high lime treatment) with an annual cost of $9.8 million, was not guaranteed to consistently achieve a 4.9 ug/L copper effluent limit. Only the reverse osmosis based treatment option, at $42.1 million per year could likely produce effluent in the 4.9 ug/L copper range, since this is a maximum limit (i.e. never to be exceeded) not an average limit as incorrectly assumed in the CTR (see below). EPA need to provide, in the CTR, the specific plant performance data, apparently from the RREL Treatability Database, that supports the contention that minor levels ($100,000) of plant optimization can achieve the proposed low part per billion metals concentrations.

Response to: CTR-021-009

See responses to CTR-021-017 and CTR-004-003.

Comment ID: CTR-035-008e
Comment Author: Tri-TAC/CASA
Document Type: Trade Org./Assoc.
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: E-01h Treatment Assumptions
References:
Attachments? N
CROSS REFERENCES E-01g08
E-01e
E-01d
E-01m
E-01c

Comment: Finally, we have serious concerns about the accuracy of the draft Economic Analysis and the estimates of the costs and benefits of the draft CTR (see detailed comments in Attachments I and 2). Our primary concerns related to the cost analysis include 1) that the case studies on which the cost analysis is based do not adequately represent the actual population of POTWs in California; 2) the omission of costs that could be incurred by many sectors that contribute to overall loadings, and, hence, can be expected to have to reduce their loadings (e.g., non-SIU indirect dischargers, municipal and industrial stormwater dischargers, agricultural activities, and other nonpoint sources of CTR-regulated pollutants); 3) the use of numerous assumptions that underestimate costs; and 4) the capricious removal of costs that exceed threshold values by assuming that regulatory relief measures will be granted, despite the lack of any proposed regulatory relief trigger in the proposed regulation.

To illustrate the degree of underestimation of costs for the POTW sector alone, we looked at potential compliance costs for the POTW sector. We found that the potential costs for 23 major POTWS. on an annualized basis, may reach $400 million. We believe that this analysis demonstrates that the potential cost consequences of compliance with effluent limits based on the proposed CTR criteria would easily exceed the $ 100 million annual cost threshold, especially when the costs of all 313 POTWs in the State are estimated. Thus, we believe that EPA must conclude that the proposed CTR could have significant economic impacts on local governments.

Response to: CTR-035-008e

See responses to CTR-021-005c, CTR-032-004, CTR-040-039, CTR-021-006b, CTR-040-037, and CTR-059-018.

Comment ID: CTR-038-004b
Comment Author: Sonoma County Water Agency
Document Type: Sewer Authority
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: E-01h Treatment Assumptions
References:

Attachments? Y
CROSS REFERENCES E-01g08
E-01m
E-01c02

Comment: 4. The economic analysis is seriously flawed. The major flaws include: (1) failing to do an appropriate sampling of dischargers having little or no dilution; (2) assuming in the high-end cost scenario that a 25% reduction could be achieved through source control and an additional 25% achieved through treatment plant optimization without capital improvements; (3) constraining estimates of potential costs through key assumptions, including the assumption that regulatory relief from the rule would be granted if costs were in excess of certain thresholds; and (4) exaggerating estimates of potential benefits by assuming an end (i.e., achievement of the proposed water quality criteria) that will not result from the rule. The result of these flaws is that potential costs are greatly understated and potential benefits are greatly overstated. The District's analysis demonstrates that actual costs may be an order of magnitude greater than EPA's $500/lb threshold and that the benefits are very small.

Response to: CTR-038-004b

See responses to CTR-054-013a, CTR-032-004, CTR-021-008, CTR-040-029a, and CTR-056-018.

Comment ID: CTR-040-032
Comment Author: County of Sacramento Water Div
Document Type: Storm Water Auth.
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: E-01h Treatment Assumptions
References: Letter CTR-040 incorporates by reference letter CTR-027
Attachments? Y
CROSS REFERENCES

Comment: Although EPA goes to great length to label its cost analysis as "conservative" the analysis is anything but conservative:

* It is not conservative to assume that effluent metals levels can be reduced to the low levels necessary to ensure compliance without any capital costs, by adding lime to existing primary tanks.

Response to: CTR-040-032

The U.S. EPA Treatability Database indicates that chemical precipitation with addition of lime is a technology capable of removing metals at the concentrations and loading reductions required. For example, several treatment plants have reached concentrations of 7.7 ug/L for copper based on a pilot study (CTR-based level for copper is 8.03 ug/L) and 0.46 ug/L for silver (CTR-based level for silver is 1.51 ug/L) (U.S.EPA RREL). Some of the sample facilities already have a clarification system in place, therefore, only capital costs for the lime feeding and conveying system need to be considered. For facilities without clarifiers, the capital cost of a primary clarifier is also included in EPA's cost estimates. EPA's cost estimates are based on EPA's Treatability Manual (1980) and are adjusted for inflation.

References: U.S. EPA. 1980. Treatability Manual, Volume IV, Cost Estimating. U.S. EPA Risk Reduction Engineering Laboratory (RREL). Cincinnati, Ohio. Treatability Database.

Comment ID: CTR-040-038
Comment Author: County of Sacramento Water Div
Document Type: Storm Water Auth.
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: E-01h Treatment Assumptions
References: Letter CTR-040 incorporates by reference letter CTR-027
Attachments? Y
CROSS REFERENCES

Comment: EPA may have greatly underestimated the cost of metals removal. EPA assumed that significant metals reductions could be achieved without any capital costs by adding lime to existing primary sedimentation tanks. But, this would increase the amount of primary sludge produced (as much as 5 times at high lime dosages) and could therefore necessitate additional sludge handling costs. Further, there is no evidence that addition of lime to the primary sediment tanks could achieve the low effluent levels required to achieve some of the metals criteria (e.g., the saltwater copper criteria). Most engineers who have addressed this issue have assumed that tertiary lime treatment would be necessary. In the Bay Area Dischargers Association analysis, tertiary limetreatment was six times the cost of primary lime addition.

Response to: CTR-040-038

See response to CTR-040-032.

Comment ID: CTR-041-028
Comment Author: Sacramento Reg Cnty Sanit Dist
Document Type: Sewer Authority
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: E-01h Treatment Assumptions
References:
Attachments? N
CROSS REFERENCES

Comment: Although EPA goes to great length to label its cost analysis as "conservative" the analysis is anything but conservative:

* It is not conservative to assume that effluent metals levels can be reduced to the low levels necessary to ensure compliance without any capital costs, by adding lime to existing primary tanks.

Response to: CTR-041-028

See response to CTR-040-032.

Comment ID: CTR-041-034
Comment Author: Sacramento Reg Cnty Sanit Dist
Document Type: Sewer Authority
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: E-01h Treatment Assumptions
References:
Attachments? N
CROSS REFERENCES

Comment: EPA may have greatly underestimated the cost of metals removal. EPA assumed that significant metals reductions could be achieved without any capital costs by adding lime to existing primary sedimentation tanks. But, this would increase the amount of primary sludge produced (as much as 5 times at high lime dosages) and could therefore necessitate additional sludge handling costs. Further, there is no evidence that addition of lime to the primary sediment tanks could achieve the low effluent levels required to achieve some of the metals criteria (e.g., the saltwater copper criteria). Most engineers who have addressed this issue have assumed that tertiary lime treatment would be necessary. In the Bay Area Dischargers Association analysis, tertiary lime treatment was six times the cost of primary lime addition.

Response to: CTR-041-034

EPA assigned separate costs for residuals removal (including sludge) where it was appropriate. EPA did not add any residuals removal costs to Sacramento Regional Wastewater Treatment Plant in association with the process optimization study that was assigned in EPA's cost estimate for the facility. EPA disagrees that lime addition cannot meet the CTR-based limits; see response to CTR-040-032.

Comment ID: CTR-043-004b
Comment Author: City of Vacaville
Document Type: Local Government
State of Origin: CA
Represented Org:
Document Date: 09/26/97
Subject Matter Code: E-01h Treatment Assumptions
References:
Attachments? Y
CROSS REFERENCES E-01g
E-01m
E-02c
E-01c02

Comment: 4. EPA's Economic Analysis is seriously flawed. The major flaws include:

(1) failing to do an appropriate sampling of small dischargers having little or no dilution;

(2) assuming in the high-end cost scenario that a 25% reduction could be achieved through source control and an additional 25% achieved through treatment plant optimization without capital improvements;

(3) constraining estimates of potential costs through key assumptions, including the assumption that regulatory relief from the rule would be granted if costs were in excess of certain thresholds; and

(4) exaggerating estimates of potential benefits by assuming an end (i.e., achievement of the proposed water quality criteria) that will not result from the rule.

The result of these flaws is that potential costs are greatly understated and potential benefits are greatly overstated. Moreover, the flawed economic analysis has lead to the erroneous conclusion that the CTR is not a "significant regulatory action" or major rule subject to Presidential Executive Order 12866 and the Unfunded Mandates Reform Act or a rule that affects small entities protected under the Regulatory Flexibility Act.

Response to: CTR-043-004b

See responses to CTR-054-013a, CTR-021-005c, CTR-032-004, CTR-021-008, CTR-040-029a, CTR-056-018, and CTR-059-018.

Comment ID: CTR-044-023
Comment Author: City of Woodland
Document Type: Local Government
State of Origin: CA
Represented Org:
Document Date: 09/26/97
Subject Matter Code: E-01h Treatment Assumptions
References:
Attachments? N
CROSS REFERENCES

Comment: Although EPA goes to great length to label its cost analysis as "conservative" the analysis is anything but conservative:

* It is not conservative to assume that effluent metals levels can be reduced to the low levels necessary to ensure compliance without any capital costs, by adding lime to existing primary tanks.

Response to: CTR-044-023

See response to CTR-040-032.

Comment ID: CTR-044-029
Comment Author: City of Woodland
Document Type: Local Government
State of Origin: CA

Represented Org:
Document Date: 09/26/97
Subject Matter Code: E-01h Treatment Assumptions
References:
Attachments? N
CROSS REFERENCES

Comment: EPA may have greatly underestimated the cost of metals removal. EPA assumed that significant metals reductions could be achieved without any capital costs by adding lime to existing primary sedimentation tanks. But, this would increase the amount of primary sludge produced (as much as 5 times at high lime dosages) and could therefore necessitate additional sludge handling costs. Further, there is no evidence that addition of lime to the primary sediment tanks could achieve the low effluent levels required to achieve some of the metals criteria (e.g., the saltwater copper criteria). Most engineers who have addressed this issue have assumed that tertiary lime treatment would be necessary. In the Bay Area Dischargers Association analysis, tertiary lime treatment was six times the cost of primary lime addition.

Response to: CTR-044-029

See response to CTR-040-032.

Comment ID: CTR-045-009b
Comment Author: Sausalito-Marin Sanitary Dist.
Document Type: Sewer Authority
State of Origin: CA
Represented Org:
Document Date: 09/24/97
Subject Matter Code: E-01h Treatment Assumptions
References:
Attachments? Y
CROSS REFERENCES E-01g08
E-01m

Comment: The draft Economic Analysis has serious flaws. It underestimates the costs of the draft CTR and overestimates the benefits. For the cost analysis, EPA should reevaluate the representativeness of the sample used; the omission of impacts on many sectors that contribute to loadings, and hence, can be expected to have to reduce their loadings (e.g., small indirect dischargers, municipal and industrial stormwater dischargers, agricultural activities, and other nonpoint sources); the incorporation of numerous assumptions that underestimate costs; and the assumption to artificially remove costs that exceed threshold values by assuming that regulatory relief measures will be granted, despite the fact that they are not automatically granted through triggers included as part of the proposed regulation.

Response to: CTR-045-009b

See responses to CTR-032-004, CTR-056-018, CTR-021-006b, and CTR-059-018.

Comment ID: CTR-049-006b
Comment Author: Watereuse Assoc. of California
Document Type: Trade Org./Assoc.
State of Origin: CA
Represented Org:
Document Date: 09/24/97
Subject Matter Code: E-01h Treatment Assumptions
References:
Attachments? N
CROSS REFERENCES E-01g08
E-01m

Comment: With respect to other criteria proposed for adoption in the draft CTR, we recommend that USEPA:

4. Review and correct existing flaws in the current "Economic Analysis."

With respect to the Economic Analysis conducted by USEPA, we are concerned that it underestimates the cost of the proposed CTR rule while overestimating its benefits. We suggest that USEPA re-evaluate (1) the representativeness of the sample used; (2) the omission of impacts on many sectors that contribute to loadings; (3) the incorporation of a variety of assumptions that underestimate costs; and (4) the assumption to artificially remove costs that exceed threshold values by incorrectly assuming that regulatory relief measures will be granted. For the benefits analysis, USEPA should utilize more California-specific and recent information. A further problem with the analysis relates to the establishment of criteria that are below analytical detection. Lacking credible data, it was not possible to conduct cost-benefit analyses or determine that any set of control measures would or could lead to compliance. This fundamental inability to utilize established rulemaking procedures requires, in our opinion, further work prior to the promulgation of the criteria.

Response to: CTR-049-006b

See responses CTR-045-011, CTR-032-004, CTR-056-018, CTR-021-006b, CTR-059-018, and CTR-052-014.

Comment ID: CTR-054-027
Comment Author: Bay Area Dischargers Associati
Document Type: Sewer Authority
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: E-01h Treatment Assumptions
References:
Attachments? N
CROSS REFERENCES

Comment: Although EPA goes to great length to label its cost analysis as "conservative" the analysis is anything but conservative:

* It is not conservative to assume that effluent metals levels can be reduced to the low levels necessary to ensure compliance without any capital costs, by adding lime to existing primary tanks.

Response to: CTR-054-027

See response to CTR-040-032.

Comment ID: CTR-054-033
Comment Author: Bay Area Dischargers Associati
Document Type: Sewer Authority
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: E-01h Treatment Assumptions
References:
Attachments? N
CROSS REFERENCES

Comment: EPA may have greatly underestimated the cost of metals removal. EPA assumed that significant metals reductions could be achieved without any capital costs by adding lime to existing primary sedimentation tanks. But, this would increase the amount of primary sludge produced (as much as 5 times at high lime dosages) and could therefore necessitate additional sludge handling costs. Further, there is no evidence that addition of lime to the primary sediment tanks could achieve the low effluent levels required to achieve some of the metals criteria (e.g., the saltwater copper criteria). Most engineers who have addressed this issue have assumed that tertiary lime treatment would be necessary. In the Bay Area Dischargers Association analysis, tertiary lime treatment was six times the cost of primary lime addition.

Response to: CTR-054-033

See response CTR-040-032.

In estimating compliance costs for facilities, EPA included costs associated with solid waste disposal costs as part of operation and maintenance costs for sample facilities.

Comment ID: CTR-086-003
Comment Author: EOA, Inc.
Document Type: Trade Org./Assoc.
State of Origin: CA
Represented Org: California Dent
Document Date: 09/26/97
Subject Matter Code: E-01h Treatment Assumptions
References: Letter CTR-086 incorporates by reference letter CTR-035
Attachments? N
CROSS REFERENCES

Comment: CDA is a strong supporter of water quality and human health protection. CDA's primary goals in commenting on the draft CTR are to request that mercury criteria be based on sound science and that mercury regulation be implemented via a watershed management, phased TMDL-type approach.

CDA is particularly concerned that the CTR does not adequately assess the economic impacts on indirect dischargers nor the extent to which there will be measurable water quality benefits solely from adoption of the proposed mercury criteria for point sources.

Economic Analysis

CDA supports CASA/Tri-TAC's conclusions that the Economic Analysis has significant technical weaknesses, is based on a large number of assumptions and minimal empirical data, and that it understates costs and overestimates benefits. The analysis found that mercury reductions of 80.4% and 51.7% would be required under the high-end and low-end scenarios, respectively. The economic analysis needs to evaluate costs and feasibility of attainability based on actual treatment plant mercury removal performance data with associated detection limits. It also needs to evaluate costs under the scenario that dilution credit would be eliminated when calculating effluent limits for bioaccumulative constituents of concern, such as mercury, for deepwater dischargers within or capable of impacting mercury nonattaininent areas.

Response to: CTR-086-003

EPA did examine detailed treatment information and pollutant removal performance data at the sample facilities to evaluate the feasibility and potential costs of meeting CTR-based WQBELs. EPA estimated that seven facilities would incur costs to meet the CTR-based effluent limits for mercury. When this information was limited, the assessment of pollutant removal feasibility was also based upon the reviewing engineer's best professional judgement using general knowledge of industrial and municipal operations.

Dilution factors used to calculate water quality based effluent limits were based on the dilution allowed within the current waste discharge requirements for each sample facility. Of the 20 sample facilities, only four were provided with dilution factors. WQBELs for the remaining facilities were based on a dilution of zero. When this sample is extrapolated to the universe, over 94% of point source dischargers are estimated to not be allowed dilution. EPA believes that this is a highly conservative estimate that will likely overestimate potential costs.

Comment ID: CTRH-002-016b
Comment Author: Lisa Ohlund
Document Type: Public Hearing
State of Origin: CA
Represented Org: Alliance of So. CA POTWs
Document Date: 09/18/97
Subject Matter Code: E-01h Treatment Assumptions
References:
Attachments? N
CROSS REFERENCES E-01c2

Comment: And finally, I'd like to comment on the analysis of the economic impact of the CTR. We

believe that the analysis does not portray a reasonable picture of what the potential costs and benefits may result from the promulgation of this CTR. In our opinion, the cost analysis contains many flawed assumptions that result in severe underestimation of the total potential costs, and we're particularly concerned about the use of process optimization and how it was relied upon.

Likewise, the benefits, while admittedly difficult to estimate, appear tenuous at best. The bottom line is that we are concerned that this analysis does not properly reveal that the CTR can lead to requirements for large expenditures by POTWs in Southern California with questionable benefits to the environment. We recommend that EPA carefully redo its economic analysis to portray a more accurate picture of the potential costs and benefits.

Thank you again for this opportunity. We look forward to submitting our comments in writing.

Response to: CTRH-002-016b

See responses CTR-054-013a, CTR-035-057, CTR-056-018, and CTR-004-003.

Subject Matter Code: E-01h01 25% Reduction Assumption

Comment ID: CTR-040-029b
Comment Author: County of Sacramento Water Div
Document Type: Storm Water Auth.
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: E-01h01 25% Reduction Assumption
References: Letter CTR-040 incorporates by reference letter CTR-027
Attachments? Y
CROSS REFERENCES E-01q01

Comment: Although EPA goes to great length to label its cost analysis as "conservative" the analysis is anything but conservative:

* It is not conservative to assume that POTWs can achieve a 25% reduction through source control and an additional 25% reduction through treatment plant optimization.

Response to: CTR-040-029b

See response to CTR-040-029a.

Comment ID: CTR-041-025b
Comment Author: Sacramento Reg Cnty Sanit Dist
Document Type: Sewer Authority
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: E-01h01 25% Reduction Assumption
References:
Attachments? N
CROSS REFERENCES E-01q01

Comment: Although EPA goes to great length to label its cost analysis as "conservative" the analysis is anything but conservative:

* It is not conservative to assume that POTWs can achieve a 25% reduction through source control and an additional 25% reduction through treatment plant optimization.

Response to: CTR-041-025b

See response to CTR-040-029a.

Comment ID: CTR-044-005b
Comment Author: City of Woodland

Document Type: Local Government
State of Origin: CA
Represented Org:
Document Date: 09/26/97
Subject Matter Code: E-01h01 25% Reduction Assumption
References:
Attachments? Y
CROSS REFERENCES E-01g08
E-01m
E-02c
E-01c02
R
S

Comment: We have reviewed the proposed CTR and offer the following comments:

4. EPA's Economic Analysis is seriously flawed. The major flaws include:

(1) failing to do an appropriate sampling of small dischargers having little or no dilution; (2) assuming in the high-end cost scenario that a 25% reduction could be achieved through source control and an additional 25% achieved through treatment plant optimization without capital improvements; (3) constraining estimates of potential costs through key assumptions, including the assumption that regulatory relief from the rule would be granted if costs were in excess of certain thresholds; and (4) exaggerating estimates of potential benefits by assuming an end (i.e., achievement of the proposed water quality criteria) that will not result from the rule. Additional concerns with the economic analysis are presented in Exhibit F. The result of these flaws is that potential costs are greatly understated and potential benefits are greatly overstated. Moreover, the flawed economic analysis has lead to the erroneous conclusion that the CTR is not a "significant regulatory action" or major rule subject to Presidential Executive Order 12866 and the Unfunded Mandates Reform Act or a rule that affects small entities protected under the Regulatory Flexibility Act. The City, for example, is a small community having a population of under 50,000 and would be greatly impacted by the proposed rule.

Response to: CTR-044-005b

See responses to CTR-054-013a, CTR-021-005c, CTR-032-004, CTR-040-029a, and CTR-056-018.

Comment ID: CTR-044-020b
Comment Author: City of Woodland
Document Type: Local Government
State of Origin: CA
Represented Org:
Document Date: 09/26/97
Subject Matter Code: E-01h01 25% Reduction Assumption
References:
Attachments? N
CROSS REFERENCES E-01q01

Comment: Although EPA goes to great length to label its cost analysis as "conservative" the analysis is

anything but conservative:

* It is not conservative to assume that POTWs can achieve a 25% reduction through source control and an additional 25% reduction through treatment plant optimization.

Response to: CTR-044-020b

See response to CTR-040-029a.

Comment ID: CTR-054-024b
Comment Author: Bay Area Dischargers Associati
Document Type: Sewer Authority
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: E-01h01 25% Reduction Assumption
References:
Attachments? N
CROSS REFERENCES E-01q01

Comment: Although EPA goes to great length to label its cost analysis as "conservative" the analysis is anything but conservative:

* It is not conservative to assume that POTWs can achieve a 25% reduction through source control and an additional 25% reduction through treatment plant optimization.

Response to: CTR-054-024b

See response to CTR-040-029a.

Subject Matter Code: E-01h02 Unit Cost Assumptions

Comment ID: CTRH-001-037c
Comment Author: Robert Reid
Document Type: Public Hearing
State of Origin: CA
Represented Org: CASA
Document Date: 09/17/97
Subject Matter Code: E-01h02 Unit Cost Assumptions
References:
Attachments? N
CROSS REFERENCES E-01c02
E-01q03

Comment: Second, the interaction between the CTR and the state's implementation policy is particularly important given our second concern, which is namely that the EPA's economic evaluation underestimates the costs and overestimates the benefits of implementing this rule.

Our concern about the cost estimates is based on the fact that the cost analysis appears to undervalue the magnitude of difficulty dischargers will have complying with permits issued based on this rule.

We are also concerned that the cost estimates for various compliance activities such as source control and treatment process optimization made in the case studies are overly optimistic and not reflective of the true actions that will need to be taken to insure compliance.

Overall, we are concerned that the expenditures that may be necessary for many POTWS to comply with the CTR will be large, these costs may not be matched by commensurate benefits, and that EPA has not analyzed whether point source controls are in fact a cost-effective way to achieve water quality standards.

Our preliminary analysis for just five agencies in the Bay Area to comply with the proposed standard for copper alone could amount to more than $60 million per year -- 60 million. This number would be far higher if calculated for every pollutant listed in the CTR for the entire POTW industry in California.

Since this estimate would undoubtedly exceed the high end of the range contained in EPA's analysis, we believe it is necessary for EPA to redo the economic analysis to fully comply with its legal responsibilities.

In addition, revised economic analysis is necessary to provide a sound basis for the State to use in its analysis of the economic impacts of the implementation policy.

Response to: CTRH-001-037c

See responses to CTR-041-018, CTR-035-057, CTR-056-018, CTR-004-003, and CTR-040-039.

Subject Matter Code: E-01i Alternative Cost Analysis

Comment ID: CTR-003-012
Comment Author: City of Riverside
Document Type: Local Government
State of Origin: CA
Represented Org:
Document Date: 09/22/97
Subject Matter Code: E-01i Alternative Cost Analysis
References:
Attachments? N
CROSS REFERENCES

Comment: 12) The cost analysis suggests that there is little difference between the cost of using a risk level of 10E-6 versus 10E-5. The reason for that is in all likelihood the fact that many of these criteria are below the detection level at both risk levels. Under the assumptions used their would be no cost to either scenario.

Response to: CTR-003-012

As part of its revised cost analysis, EPA estimated the changes in estimated costs and pollutant load reductions based on the lower risk level of 10-5. Under the low scenario, costs decrease by $1.1 million, approximately 11% less than the costs based on the higher risk level. Under the high scenario, annual costs decrease by $5.8 million, also an 11% decrease from the costs based on a 10-6 risk level. Pollutant load reductions attributable to use of a lower risk level are estimated to decrease by approximately 4% and 1% under the low and high scenarios, respectively. The relatively low sensitivity of costs to the change in risk level primarily is related to the fact that most of the potential costs related to implementing the CTR are being driven by metals. Changes in risk levels for carcinogens primarily affect organic pollutants.

Comment ID: CTR-021-015
Comment Author: LeBoeuf, Lamb, Green & MacRae
Document Type: Local Government
State of Origin: CA
Represented Org: City of Sunnyvale
Document Date: 09/25/97
Subject Matter Code: E-01i Alternative Cost Analysis
References: Letter CTR-021 incorporates by reference letter CTR-035
Attachments? Y
CROSS REFERENCES

Comment: Appendix III-B:

The analysis conducted in Appendix III-B is essentially the same as that shown in the previous appendices, except that it is assumed that the dissolved criteria converts directly to a total criteria (translator =I). The implication of this is methodological assumption that 100% of the total pollutants discharged in the effluent are in dissolved form. Results from this appendix represent an absolute worst

case, are misleading and inappropriate. It has been shown that the assumptions used to generate the analysis in Appendix I-B (TSS, translator values, and 95%tile values for chronic WLAs) are already highly conservative.

Response to: CTR-021-015

The criteria for metals in the proposed rule are expressed in the dissolved form. Permitting regulations, however, require that permit limits be set in terms of total recoverable metals concentrations. Therefore, permit writers must "translate" dissolved criteria to derive total recoverable permit limits which can be done through a variety of methods. The preferred methodology employs site-specific information to derive the translator. However, since not all site-specific information was available, the base case analysis used a second method, the theoretical partitioning relationship, to estimate the translator. According to recent EPA guidance on translators, this method usually tends to overstate the stringency of the derived permit limit compared to the site-specific method, although it will sometimes understate the stringency (U.S. EPA, 1996). A third method is to simply use the total recoverable criteria that are derived by dividing the dissolved criteria by the conversion factor. This method is very conservative and will, in nearly all cases, result in more stringent permit limits compared to the site-specific method.

EPA performed a sensitivity analysis to estimate the effect of the use of total recoverable criteria on CTR-based WQBELs, total costs, and load reductions. CTR-based WQBELs are calculated using the same methods described in Chapter 4 of EPA's Economic Analysis, except that total recoverable criteria are used in place of dissolved criteria for metals. The analysis shows that a significant increase in costs can be expected by using total recoverable criteria, as compared to the costs of the theoretical partitioning approach used in the base case analysis. Potential annual costs under the low scenario are $62.4 million per year, an approximately two-fold increase over the estimates in the low base case analysis. Under the high scenario, total costs are estimated to be nearly $325 million per year, over five times the cost estimates in the base case analysis. Potential load reductions are estimated to increase by approximately 14% over the low base case scenario, and by nearly 7% under the high scenario. Using conversion factors as translators would result in significantly higher costs per toxic pound-equivalent removed than the base case analysis. The cost-effectiveness of the low scenario is $50 per toxic pound-equivalent removed compared to $31 per toxic pound-equivalent removed in the base case analysis. The cost-effectiveness of the high scenario is $111 per toxic pound-equivalent removed compared to $22 per toxic pound-equivalent removed in the base case analysis.

Although the cost effectiveness for this translator sensitivity analysis is reasonable, EPA believes that the costs estimated from this analysis greatly overstate true costs. EPA expects that in cases where a facility may incur substantial economic impacts due to an effluent limit for a metal, there will be strong incentives for the facility or the state to develop site-specific data, which will result in more realistic translators, thus reducing potential economic impacts. EPA believes that the cost estimates developed using the theoretical partitioning approach in the base case are more realistic than the cost estimates from this sensitivity analysis.

Reference: U.S. EPA. 1996. The Metals Translator: Guidance for Calculation of a Total Recoverable Permit Limit From a Dissolved Criteria.

Comment ID: CTR-052-005a
Comment Author: East Bay Dischargers Authority
Document Type: Sewer Authority

State of Origin: CA
Represented Org:
Document Date: 09/26/97
Subject Matter Code: E-01i Alternative Cost Analysis
References: Letter CTR-052 incorporates by reference letters CTR-035 and CTR-054
Attachments? Y
CROSS REFERENCES E-01d01

Comment: EPA has greatly understated the potential attainability problems associated with the CTR. This also includes numerous erroneous assumptions made in the EA, such as those described by BADA, CASA/Tri-TAC, and M.Cubed. Larry Walker Associates prepared an Attainability Analysis for the BADA agencies, copy attached. That analysis concluded that BADA agencies will not be able to comply with effluent standards for copper, nickel, pesticides (Aldrin and Heptachlor), and PAHs [Benzo(a)Pyrene, Dibenzo(a,h)Anthracene, and lndeno(1,2,3-cd)Pyrene]. Removals ranging from approximately 20% to nearly 90% will be required. Without major revisions to the CTR, the cost for compliance will be more than $130,000,000 annually. These costs represent only the BADA agencies. Actual costs for all POTW dischargers to San Francisco Bay would be at least an additional 40%, bringing the total annual cost for San Francisco Bay ratepayers to more than $185,000,000 on a strictly flow proportional basis. Since the non-BADA POTWs are significantly smaller, capital costs would actually increase due to loss of economy of scale. Therefore, actual costs for San Francisco Bay could easily exceed $200,000,000 per year - all for the sole purpose of removing between 1-10% of the "Estimated Share of Toxic Loadings Attributable to Point Source."(*1)

(*1)United States Environmental Protection Agency, Office of Water 4301, EPA-820-B-96-001, July 1997, Economic Analysis of the Proposed California Water Quality Toxics Rule, Executive Summary, Page ES-10, Exhibit ES-3. Estimated Share of Toxic Loadings to California Surface Waters Attributable to Point Sources.

Response to: CTR-052-005a

EPA disagrees with the annual compliance cost estimate of $130 million taken from an attainability analysis performed for BADA. This figure represents the higher of two estimates presented in the BADA analysis and corresponds to the use of tertiary lime addition. The lower cost estimate ($68 million) presented in the analysis is based on lime addition to primary tanks. The attainability analysis also uses the costs for the City of Merced from EPA's economic analysis of the proposed CTR as a basis for estimating carbon adsorption costs.

In EPA's revised economic analysis, EPA no longer estimates that the City of Merced will need to add costly granular activated carbon (a cost of $4.2 million annually) to comply with CTR-based limits. EPA's revised analysis indicates that pollution prevention and process optimization (a cost of $594,000 annually) should be sufficient to ensure compliance with CTR-based limits. If EPA's revised cost estimate were used, the BADA cost estimates would be significantly lower because $56 million of both estimates is based on the old Merced cost estimate.

The BADA analysis also provides an estimate of costs for San Jose, one of the sample facilities in EPA's detailed cost analysis. The BADA analysis estimates costs of $7.75 million to $54.07 million for copper reductions (nickel reductions are included in the pollution prevention costs for copper). BADA

estimated a 54% reduction for copper and a 5% reduction for nickel. EPA's analysis contained a 17% required reduction for copper and none for nickel with estimated annual costs of approximately $300,000 for pollution prevention under the high cost scenario.

The differences in load reductions between BADA and EPA's analyses result from the different baselines in the two analyses. BADA uses a 99.9% probability estimate for metals and the maximum observed concentration for organics as its baseline to estimate loading reductions. EPA uses the existing NPDES permit limit or, in the absence of an existing limit, the maximum effluent concentration to estimateloading reductions which are then considered when assigning costs to reach the necessary load reductions.

BADA's analysis assumed pollution prevention costs for reductions of up to 10%, whereas EPA considered pollution prevention an option for reductions of up to 25%. EPA believes that a 25% loading reduction is a more realistic cap for pollution prevention efforts than 10%. EPA's analysis assumes that facilities will try to meet CTR-based limits using the least cost option and, for loading reductions between 10% and 25%, EPA believes that pollution prevention or process optimization are the more likely options over end-of-pipe treatment.

EPA did not assign costs mechanically based on unrealistic guidelines and statistical procedures to predict worst-case effluent quality as a means for determining compliance as was done in the BADA analysis. EPA's cost decision matrix allows for the consideration of the available monitoring and permit data in the context of detection limits, facility processes, and potential irregularities in plant operations which might result in abnormally high data. EPA believes that its methodology is more appropriate for assessing data and estimating costs than that used by BADA.

See also response to CTR-040-039.

Comment ID: CTR-052-009
Comment Author: East Bay Dischargers Authority
Document Type: Sewer Authority
State of Origin: CA
Represented Org:
Document Date: 09/26/97
Subject Matter Code: E-01i Alternative Cost Analysis
References: Letter CTR-052 incorporates by reference letters CTR-035 and CTR-054
Attachments? Y
CROSS REFERENCES

Comment: IMPACTS ON THE AUTHORITY AND ITS MEMBER AGENCIES

Attainability Analysis. The Attainability analysis performed by Larry Walker Associates and Authority staff concludes that the Authority will not be able to comply with effluent limitations for copper, heptachlor, Dibenzo(a,h)Anthracene, and possibly Benzo(a)Anthracene. The following table summarizes compliance issues and solutions.

Pollutant	% Removal Required	Remedy
Copper	8-9	Pollution Prevention
Heptachlor	88	Carbon Adsorption
Dibenzo(a,h)Anthracene	30	Carbon Adsorption

Benzo(a)Anthracene 10 Pollution Prevention?

In addition, it is unknown whether future compliance issues would arise for numerous pollutants where the current Method Detection Limits (MDL) are above the anticipated effluent limitations. As noted previously, EPA's assumption that non-detect data equals compliance, and therefore, no costs is not justified. Only POTWs with the most resources have real data or many pesticides and PAHS. Smaller facilities tend to have nothing but non-detect data. Since the Authority and other BADA agencies have detected these pollutants, it is reasonable to assume that other agencies would if they used lower detection limits. Therefore, it is logical to assume that once technology provides lower detection limits, other compliance issues will arise.

Response to: CTR-052-009

See responses to CTR-003-011 and CTR-004-002.

Comment ID: CTR-059-027
Comment Author: Los Angeles County Sanit. Dist
Document Type: Sewer Authority
State of Origin: CA
Represented Org:
Document Date: 09/26/97
Subject Matter Code: E-01i Alternative Cost Analysis
References: Letter CTR-059 incorporates by reference letter CTR-035

Attachments? Y
CROSS REFERENCES E-01g08

Comment: Attainability Analysis

Based on our review of the CTR, at least seven of the Sanitation Districts' Water Reclamation Plants (WRPS) would be affected by the proposed rule. They include the Pomona WRP (15 MGD(*1)), the Whittier Narrows (15 WRP), the San Jose Creek WRP (100 MGD), the Los Coyotes WRP (37.5 MGD), the Long Beach WRP (25 MGD), the Saugus WRP (6.5 MGD) and the Valencia WRP (12.6 MGD). The seven WRPs treat mainly residential and commercial waste, with less than 10% of the influent coming from industrial sources. On an annual basis, over 38% of the reclaimed water is reused for applications including groundwater recharge, landscape irrigation and industrial uses. The remainder is discharged to inland surface waters that are effluent dependent water bodies. The existing and potential designated uses of the receiving waters are diverse and include groundwater recharge, water recreation, warm fresh water habitat, wildlife habitat; commercial and sport fishing; wildlife habitat; rare, threatened or endangered species; and spawning, reproduction, and early development.

A preliminary review of historical monitoring data has shown that plant effluent concentrations of mercury, lindane and four trihalomethanes (bromoform, chlorodibromomethane, chloroform and dichlorobromomethane) frequently exceed the proposed CTR criteria at each of the seven plants. Further evaluations were conducted to determine if loading reductions could be achieved through source control or pollution prevention options and/or treatment.

Source Control and Pollution Prevention Options

The Sanitation Districts' industrial waste pretreatment program was established to ensure that all treatment facilities are able to comply with waste discharge requirements; to protect the public and the environment; and to protect personnel and facilities from potentially harmful industrial wastes. To achieve these objectives, a systemwide pretreatment program was created in 1972. The program presently regulates an extensive and varied industrial base consisting of 3,300 industries, of which 1,335 are Significant Industrial Users (SlUs).

For the CTR constituents of concern, our review has shown that there is very little potential for achieving additional reductions in pollutant loadings through source control or pollution prevention. In the case of mercury, we estimate that only 4% of the influent mercury loadings are from industrial sources. Thus, reductions of the mercury industrial contribution to meet the proposed CTR criteria would be ineffective. The same is true for other POTWs in California. For example, a 1997 study(*2) conducted for the City of Palo Alto demonstrated that the primary sources of mercury to the Palo Alto Regional Water Quality Control Plant were from residents (46%), the water supply (22%), dentists (9%), permitted industries (4%), storm water inflow (3%), employee-related human waste (30%), Stanford University (30%) and other sources (1%). None of the regulated dischargers in the Palo Alto service area used mercury in any manufacturing process. In addition, a study conducted for the Central Contra Costa Sanitary District, which serves an estimated population of 236,200, showed that over 11 pounds per year of mercury were discharged by residential sources including human waste, laundry greywater, thermometers, contact lens solution, household products and food waste. Since residential contributions of mercury are so significant, there are very limited options for control other than educational outreach programs and/or implementation of best management practices, which may have limited effectiveness yet can be costly to develop and implement.

In the case of lindane, pollution prevention is also not feasible. The primary sources of lindane can be traced to consumer products such as flea shampoos for pets and human lice shampoo. Traditional methods of source control such as permitting or the application of best management practices would not be practical or effective. The only viable source control alternative would be a ban on constuner products that use lindane as an active agent. This approach would require the cooperation of federal and state agencies, and the manufacturers of the commercial products. Since these products have a legitimate use for public health protection, some substitute product would need to be provided. Presumably, EPA would need to determine if replacements for lindane were more or less environmentally friendly in terms of overall water quality protection,

Trihalomedwes (THMs) are another example of where source control is not feasible option. Current maximum contaniinant levels allow for chloroform, bromoform, chlorodibromomethane and dichlorobromomethane concentrations up to 100 ug/L in drinking water that is used upstream and discharged to POTWs. The average concentration of THMs in the influent to the Sanitation Districts' water reclamation plants ranges from 2 ug/L to 10 mg/L, well below the drinking water standard, yet above the proposed CTR criteria. We believe that the drinking water supply accounts for almost the entire loading. Since local water supplies are in compliance with drinking water standards, no further source control options are viable.

Based on this assessment, it is apparent that EPA drastically underestimated the costs of the CTR by assuming that in many cases compliance could be achieved through source reduction or pollution prevention. EPA's assertion that 10 to 25 percent reductions in current discharge levels is "insignificant," and would be fully addressed by low-cost waste reduction strategies clearly does not take into consideration the fact that much of the priority pollutant loading to POTWs comes from residential and commercial sources rather than industrial sources.(*4) The former are considerably more diverse and

numerous, and not easily controlled.

Since it is unlikely that source control or pollution prevention measures by themselves will ensure compliance with the CTR, advanced treatment at the Sanitation Districts' seven WRPs would be required. Our preliminary evaluation of viable treatment options indicates that reverse osmosis (RO) would be needed to remove the constituents of concern. Although other forms of advanced treatment such as air stripping and/or carbon adsorption could be used to reduce lindane and trihalomethane concentrations in the treated wastewater to acceptable levels, they would be ineffective for treating mercury. Thus, RO was selected based on its ability to effectively treat mercury, lindane and the trihalomethanes.

The preliminary cost estimate for providing RO treatment at each of the seven WRPs is significant. For exwnple, just the estimated capital investment (including construction, engineering and administrative costs) alone exceeds $470 million collectively for the seven plants.(*5) When amortized over IO years at a 7% interest rate, the capital investment is approximately $68 million per year. After including the estimated annual operation and maintenance costs of approximately $79 million, the total annualized cost for RO treatment at the seven WRPs is approximately $148 million. To put this estimated cost into perspective, the addition of RO treatment would double the single family home service charge rate for the Sanitation Districts' Joint Outfall System (JOS) service area and triple the service charge rate for the Santa Clarita Valley Joint Sewerage System (SCVJSS) service area.(*6)

Further investigation into the amount of wastewater requiring treatment at each facility and the optimal combination of treatment will be performed in an effort to fine tune the cost estimates. It is likely that if RO treatment is added, only a portion of each plant's wastewater flow would be treated and subsequently blended with non-RO treated wastewater to meet the proposed limits. Itis also possible that the optimum advance treatment system may include carbon adsorption, air stripping and RO. For the two WRPs in the SCVJSS, additional costs will be incurred for providing facilities for brine disposal associated with the RO treatment process. Preliminary cost estimates indicate that the capital costs for a brine line would be $45 million, corresponding to an amortized cost of $6.4 million per year over I 0 years at a 7% interest rate. Further work is nee" to refine these and the other estimates. Although the cost estimates presented are somewhat preliminary, they are believed to accurately represent the order of magnitude of cost for the Sanitation Districts to achieve attainment with the proposed CTR criteria.

(*1) Design capacities are indicated for each plant.

(*2) EIP Associates. Mercury Source Identification. August 1997.

(*3) Larry Walker Associates. Residential Metals Study. May 1994.

(*4) U.S. General Accounting Office, "Water Pollution: Nonindustrial Wastewater Pollution Can Be Better Managed" (GAO/RCED-92-40, December 1991), Ch. 2. Treatment Options and Costs

(*5) The RO costs estimates (including capital and operation and maintenance) are based on information obtained from Orange County's Water Factory 21 facility and the 1982 Orange and Los Angeles Counties Water Reuse Study Facilities Plan.

(*6) The treatment figures represent the total population and number of businesses actually served by the seven WRPs. However, it should be noted that the plants service separate treatment systems. Five of the WRPs are part of the Joint Outfall System (JOS), which serves a total of 5 million people and over 3,300 permitted industries. Because the rates for these plants are calculated based on the costs for the entire

system, which includes the Joint Water Pollution Control Plant, increases in rates due to installation of new treatment systems would be home by all users of the JOS. This would, of course, result in lower costs on a sewage unit basis (i.e., per household), although far more people would experience rate increases. The remaining two WRPs provide treatment for the Santa Clarita area, which has a significantly lower population than the JOS. The service charge rates for this area are 57% higher that those of the JOS, so any rate increases would have a disproportionately high impact on those communities.

Response to: CTR-059-027

LACSD dismisses pollution prevention as "costly to develop and implement" in favor of reverse osmosis, a very expensive treatment technology. EPA disagrees that pollution prevention cannot be effective in reducing pollutant loadings from sources other than industrial sources. EPA compiled two documents, Overview of Pollution Prevention Approaches at POTWs and Pollution Prevention at POTWs, a Resource List (available in the record for this rulemaking), which identify successful programs to reduce mercury and lindane through public education and source controls. EPA believes that facilities will employ lower-cost alternatives such as pollution prevention before resorting to expensive additional treatment processes to achieve CTR-based limits, such as reverse osmosis. The trihalomethanes that occur in concentrations above CTR-based criteria but below drinking water standards are disinfection byproducts and may be manageable through process optimization (see response to CTR-003-013).

See responses to CTR-040-029a, CTR-056-018, CTR-004-003, CTR-045-012b, CTR-005-004, CTR-054-033, and 059-001.

Comment ID: CTR-092-021
Comment Author: City of San Jose, California
Document Type: Local Government
State of Origin: CA
Represented Org:
Document Date: 09/26/97
Subject Matter Code: E-01i Alternative Cost Analysis
References: Letter CTR-092 incorporates by reference letter CTR-035
Attachments? Y
CROSS REFERENCES

Comment: Comment #5: Related Issues on Policy Assumptions

(Re: Page I-A-11 of the "Technical Support Document (Appendices)" for the "Analysis of Potential Costs Related to Implementation of the California Water Quality Toxics Rule)

The page cited above presents an Alternative Analysis for the City of San Jose with regard to the discharge quality of the San Jose/Santa Clara POTW effluent compared to that which would be permissible under the CTR for copper. The text states:

"Note that for the exception of outlying values, the average concentrations are low and within the range of the potential CTR limits."

It is precisely those outlying values which cause the San Jose/Santa Clara POTW to be in noncompliance

with its NPDES permit. It seems circular at best for EPA to take specific note of the very factors which create non-compliance with the permit and then assume them away and determine that San Jose/Santa Clara will have no cost of meeting the CTR copper criteria because our costs are really those of complying with the permit standard -- which does not except outlying values.

The cited text further states that "To achieve these reductions, the City is assumed to prefer an aggressive pollution prevention program by targeting specific industries and focusing on commercial dischargers." Note that this has already been undertaken and is insufficient, to allow compliance with expected permit limits.

Questions for EPA on Comment #5:

Q.5-1) As alluded to earlier in the comment regarding application of the analysis to San Jose, we are concerned that the assumptions incorporated in the Model #2 high end scenario understate the actual costs of meeting the CTR. Does EPA support the exclusion of outlying values in the State's calculation of compliance? How would the high end costs change were San Jose/Santa Clara to be considered in compliance, thus incremental costs would analytically accrue to the CTR?

Q.5-2) What evidence brought EPA to the conclusion that the City would "prefer an aggressive ... focusing on commercial dischargers"? How would changing that assumption affect the costs of implementing the CTR?

Response to: CTR-092-021

EPA disagrees with the commenter that the high scenario understates costs. EPA believes that the high scenario actually overstates costs because the high scenario is based on existing permit limits and not effluent data. If effluent data is actually below the existing limit, as it is for San Jose, then compliance costs may be overstated. EPA does not support the exclusion of outlying values in assessing compliance. In fact, EPA considers all data including outliers when it is estimating treatment requirements. However EPA does not include the costs for facilities to come into compliance with existing permit limits because these costs would be incurred even without the CTR. EPA estimated costs for San Jose to move from compliance with existing permit limits to the CTR-based limits, thus the high scenario cost estimate for San Jose would not change if San Jose were considered in compliance.

EPA's revised cost analysis for San Jose no longer mentions an "aggressive pollution prevention program." Under the revised cost analysis, the required reductions are low (17% for copper, 0% for silver, and 2% for chloroform). Thus, EPA assigned pollution prevention for the metals and process optimization for chloroform to ensure compliance with CTR-based limits. EPA's revised cost estimates for San Jose are $296,000 under the high scenario and $57,000 under the low scenario.

See also response to CTR-092-019.

Subject Matter Code: E-01j

Comment ID: CTR-069-002b
Comment Author: CA Bus Prop Ass & Bldg Ind Ass
Document Type: Trade Org./Assoc.
State of Origin: CA
Represented Org:
Document Date: 09/26/97
Subject Matter Code: E-01j
References:
Attachments? N
CROSS REFERENCES J-01

Comment: Additionally, CBIA and CBPA are concerned with the findings in the "Economic Analysis of the Proposed California Water Quality Toxics Rule." The acknowledgment by EPA in the economic analysis that "the water quality criteria in this rule may also have an indirect effect on sources not permitted under the NPDES program or not subject to numeric water quality-based effluent Emits is extremely troublesome. Sources not permitted under the NPDES program include nonpoint sources and wet weather discharges such as runoff from farms and urban areas. The economic analysis continues by stating that "any potential effect on these sources is unknown at this time" and that "the State may ask or require these sources to implement best management practices or participate in a comprehensive watershed management approach. Since the economic analysis only focuses on the costs to point source dischargers and not non-point discharges, CBIA and CBPA believe that the potential economic impact of the proposed rule is greater than identified in the economic analysis.

We thank you for your consideration of these comments.

Response to: CTR-069-002b

See response to CTR-021-006b.